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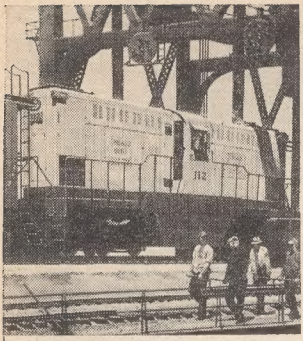

RAILROAD

MAGAZINE

Originally Railroad Man's Magazine, founded 1906

December, 1951 Vol. 56, No. 3 35 Cents

Cover: ***Business as Usual*** **(Chicago Outer Belt Line)**
By ***Herb Mott***

ILLUSTRATED FEATURES

Commuting on the New York Central ..... *Melvin Krampf* 14
Ohio Mixed Train ..... *Richard J. Cook* 34
The Land Grant Legend *(Conclusion)* ..... *H. H. Gross* 40
Journey's End for Packages ..... *Steve Canton* 74

TRUE TALES

Section Foreman or Butcher ..... *W. E. Flack* 10
Keep 'Em Running ..... *Ralph Anderson Bennitt* 104

FICTION

Boomers Eastbound ..... *C. A. Roach* 92

SHORT HAULS

Terror at Lookout Mountain ..... *J. Y. Monroe* 6
Along the Iron Pike ..... *Joe Easley* 54
Locomotive *Atlantic* with *Imlay* Coaches *(Part I)* ..... *Henry B. Comstock* 70
Locomotives of the Duluth, Missabe & Iron Range 102
Fiddletown & Copperopolis *(No. 40)* ..... *Carl Fallberg* 120

DEPARTMENTS

Light of the Lantern *(Locomotive Power, Middleton)* 57
Electric Lines *(Illinois Terminal Railroad, Maguire)* 80
On the Spot *(Switch Shanty Gossip)* 118
Railroad Camera Club *(Shop Photographer, Joslyn)* 131

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ASSOCIATE EDITOR: Ted Sanchagrin **ART EDITOR: George H. Mabie**
ELECTRIC LINES: Stephen D. Maguire

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Published monthly by Popular Publications, Inc., at 1125 E. Vaile Ave., Kokomo, Indiana. Editorial and Executive Offices, 205 East 42nd Street, New York 17, N. Y. Henry Steeger, President. John J. McVarish, Treasurer. Entered as second-class matter at the Post Office at Kokomo, Indiana. Copyright, 1951, by Popular Publications, Inc. This issue is published simultaneously in the Dominion of Canada. Copyright under International Copyright Convention and Pan-American Copyright Conventions. All rights reserved, including the right of reproduction, in whole or in part, in any form. Title registered in U. S. Patent Office. Single copy, 35c. Annual subscription for U. S. A., its dependencies, and Canada, $3.50. Other countries, $1.00 additional. All correspondence relating to this publication should be addressed to 1125 East Vaile Ave., Kokomo, Indiana, or 205 East 42nd St., New York 17, N. Y. When submitting manuscripts, enclose stamped, self-addressed envelope for their return, if found unavailable. The publishers will exercise care in the handling of unsolicited manuscripts, but assume no responsibility for their return. Printed in the U. S. A.

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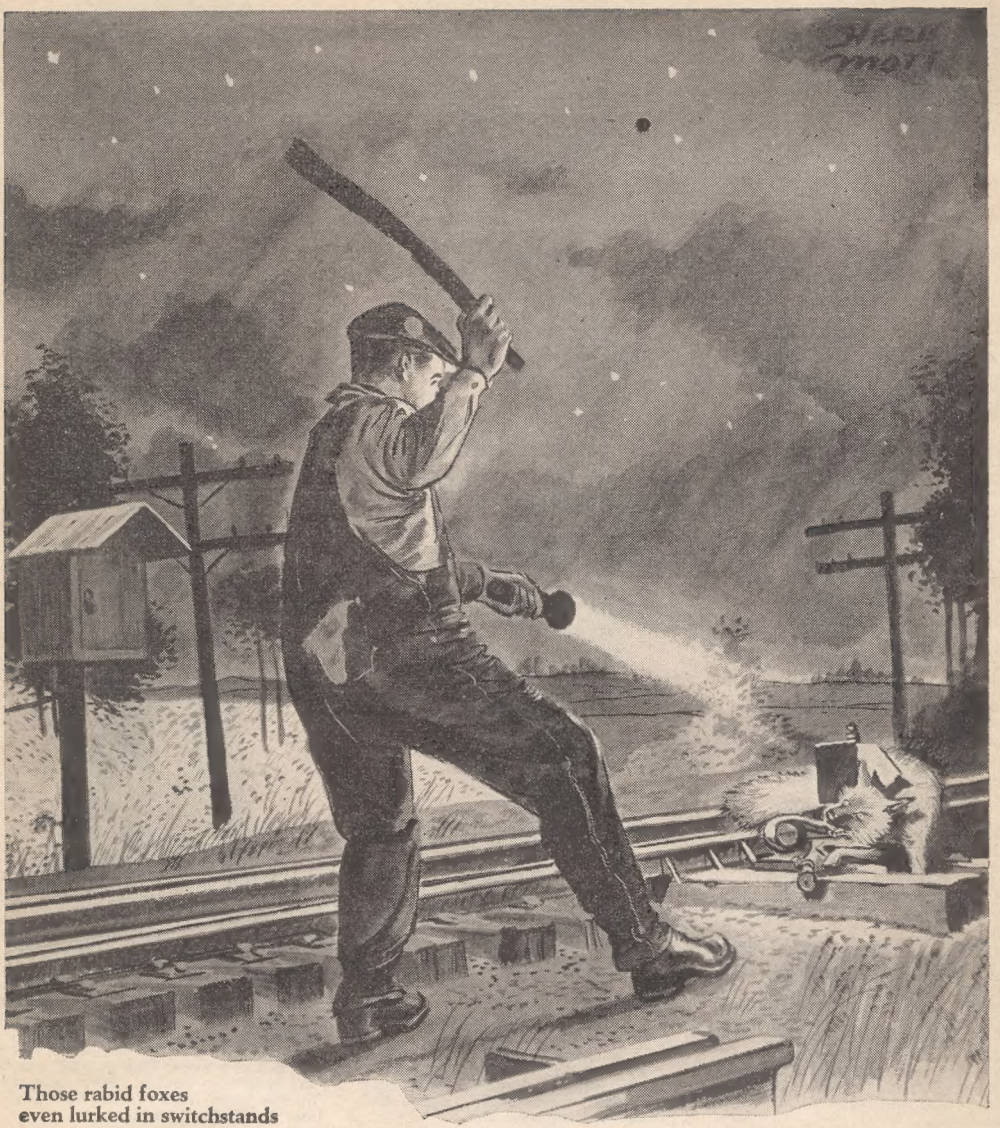

Those rabid foxes
even lurked in switchstands

Terror at Lookout Mountain

J. Y. MONROE

WHEN I WAS third trick telegraph operator in 1943 at Sulphur Springs, Ga. an epidemic of hydrophobia broke out among the foxes in that wild and lonely section at Lookout Mountain. We railroad workers who had to be out at night experienced much difficulty with these dangerous pests. At this densely-wooded little whistle stop I could hear them barking close by my office at all hours of the night.

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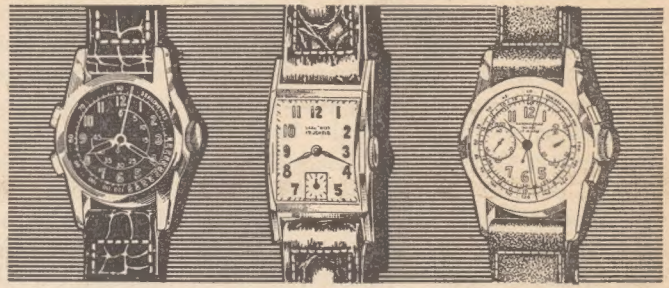

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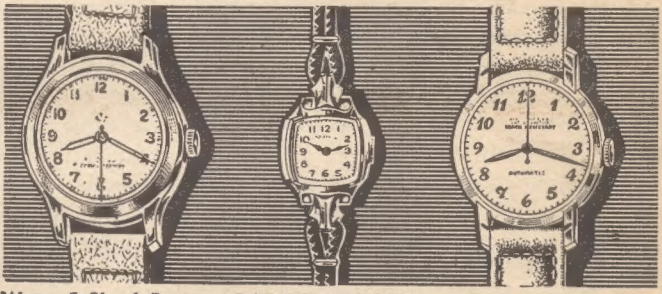

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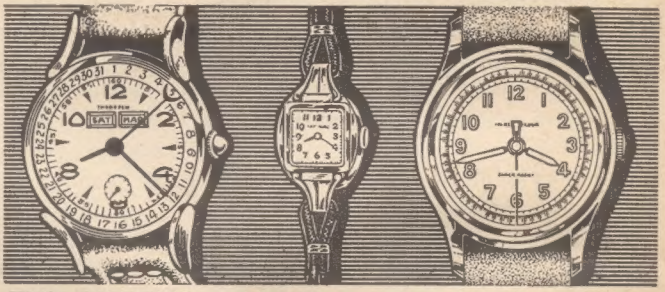

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deed to step out of my lighted office into pitch darkness, half expecting to be bitten by one of these rabid foxes. At least 20 times a night I had to stand rigid along the tracks, hold aloft a hoop with train orders and pray that I wouldn't be bitten.

Ordinarily it would have been easy without the foxes. Still it was up to me to get those train orders safely aboard some fast-moving oil trains. As the huge engine, pulling 60 cars of oil, passed me at 60 miles an hour, the fireman would grab the order if I held the hoop motionless, but sometimes he, of course, would fail to grab it, and the train would have to stop and back up, losing the time the 19 order was to save.

Then, if the locomotive connected safely I would stay there in the darkness until the caboose came flashing by and I would repeat the same business for the conductor. If I moved he wouldn't be able to land his 19, and he would have to open the air cock at once and bleed the line to stop the train.

As long as the men were aboard a train they were safe from the foxes, except when entering a side track. And the flagmen found it extremely risky going back to flag, too. A gun was almost useless against the crazed animals since they were small and swift, hard to evade. Personally I found a club my best weapon.

These diseased beasts would attack anybody and anything. Hundreds of the animals died under the wheels of our trains. And they had an especially annoying habit of curling up in the switch stands at each end of a siding, so when a member of the train crew would bend down to undo the switch lock the fox would strike. Railroaders learned to carry clubs and flashlights as a precaution. These tussles occurred frequently on lonely stretches of track where trains had to go in the hole.

OUR SECTION MEN were working on the tracks a couple of miles north of Sulphur Springs Station one evening when they spotted what looked like a small dog charging towards them down the middle of the right-of-way. They took refuge on their hand car to one side of the roadbed, just in case. The dog turned out to be a mad fox as it came closer. It veered off the track and sprang to the hand car, where it was killed with a blow from a lining bar swung by one of the men. That long, heavy steel tool, ordinarily used to jerk rails, was looked upon with new awe.

There were many, many foxes in the area, and of course most of them probably were rabid. Folks in the region resorted to scattering poison in the woods, but the wily foxes weren't fooled. All the poison did was kill other wildlife. People formed posses, hoping to destroy them that way, but while the hunters were scouring the woods the foxes would invade the barns and farms.

Humans, cats, dogs, squirrels, horses, cows, pigs—all suffered from bites or expectation of attack. One family at their noon meal were astonished when their cat came skittering into the dining room, with a red fox in pursuit. Only a few seconds before, the cat had been dozing on the front porch.

One nearby city found it necessary to destroy all the pet squirrels in the park because disease had spread among them. In the hysteria, dogs often were destroyed on sight regardless of ownership and lack of infection.

People living in the country adopted a strict rule to keep all doors and windows closed tightly at all times, day or night. This was a *must* rigidly adhered to. One member of each family stood guard with a shotgun, keeping a strict lookout for the insane pests. Such watchfulness paid big dividends time and again.

I heard many different theories why the foxes became infected, but I am certain no one ever hit on the real reason, although I don't know what it actually was.

A man in the neighborhood penned up a hog that had been bitten by a rabid fox. and in the center of the enclosure was a large oak tree three feet thick. I wish you could have seen the way this tree was scarred, bitten by the hog in its insane frenzy.

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☐ **SAVE POSTAGE** — check here if you enclose $9.95 with coupon. We pay all postage and handling charges. Same money back guarantee applies.

LOSE WEIGHT OR NO CHARGE

DURING my six months at the little Georgia station, I boarded with the old pumper who lived a mile north of the depot. Each night I had to walk this mile, at midnight, to my office. I traveled along the tracks, always carring a heavy club, a big flashlight, a .38 revolver and an electric lantern. I kept my eyes working overtime. I knew the little devils were out and I swished the light back and forth, in every direction. I bolstered myself by firing the .38 frequently to scare them away. But later I heard on good authority this was wasted effort because a mad fox is stone deaf and depends on sight and scent, doubly acute when infected. I don't know, but it comforted me to throw lead around on those lonely midnight hikes to work.

It became such a strain on my nerves I finally bid in another station and left that neck of the country. I have no desire to return. The mad fox epidemic was never cleared up. It isn't being handled at all, simply ignored because no way has been found. Instead of decreasing, it's increasing, both in tempo and territory. Right now so many cattle are being destroyed by wild foxes that the government has been asked to help.

Section Foreman... Or Butcher

W. E. FLACK

THE SECTION FOREMAN at Engle, New Mexico had charge of a section that runs through part of the Diamond A Cattle Company holdings. There were no roads crossing the tracks but about every two miles there were cattle crossings made just like road crossings, except there were no crossing planks on the tracks. There were guards to keep cattle from getting on to the right-of-way from the crossings. These cattle crossings were to let the cattle pass from one side of the tracks to the other side. Once in awhile a train would run into the cattle at one of these crossings, but it did not happen very often so when reports started coming in nearly every week about some steer getting hit and killed at one of these cattle crossings with no supporting report from an engineer, it started the roadmaster wondering.

The State of New Mexico had a law when an animal was killed on the railroad it was the railroad's duty to skin it, hang the skin on the fence and to leave it hanging for 30 days with the brand outside so any cattle man could ride up on the outside of the fence and tell at a glance to what ranch the animal belonged.

Every time the section foreman made his report that a steer had been killed at a certain milepost location, there would be a fresh hide hanging on the fence and a fresh mound of dirt alongside the track with offall scattered around. This was very good supporting evidence that an animal had been killed, skinned and buried, but in no case did there appear any report from an engineer that he had hit any stock.

The railroad paid the Diamond A Cattle Company for the stock reported killed by this section foreman. Some of the engineers were under suspicion of sleeping on the job and not knowing when they killed a steer.

The roadmaster got in the habit of going to Engle on trains or on motorcars and staying awake all night to find out what was going on. He had to keep this

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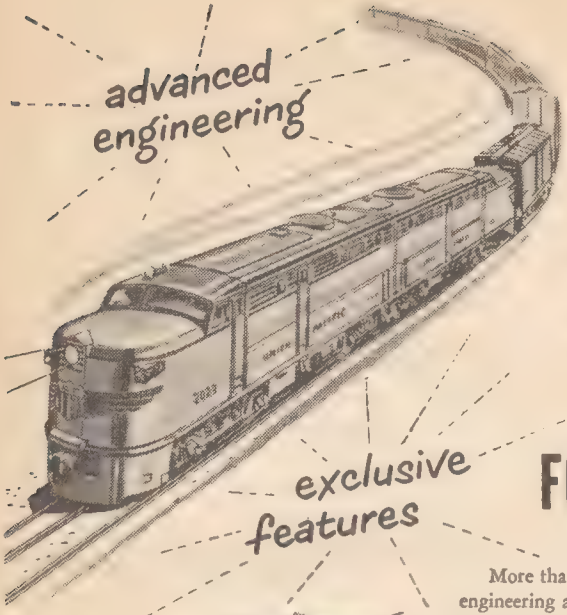
advanced engineering



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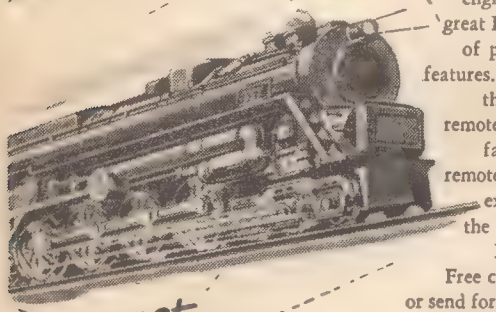
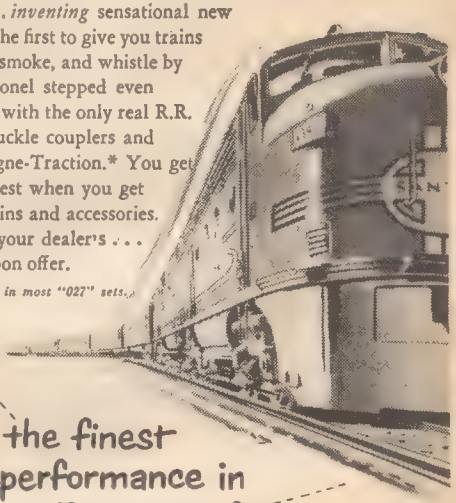
More than 50 years of model railroad engineering are behind every detail of these great LIONEL TRAINS. More than 50 years of pioneering . . . *inventing* sensational new features. Lionel was the first to give you trains that puff real smoke, and whistle by remote control. Lionel stepped even farther ahead with the only real R.R. remote-control knuckle couplers and exclusive Magne-Traction.* You get the World's Finest when you get LIONEL trains and accessories. Free catalogue at your dealer's . . . or send for special coupon offer.

*available in all "0" gauge sets and in most "027" sets.





most realistic design

the finest performance in 50 years of model railroading

fun for all!

10 Full Color Billboards

Hear...Bells...Horns whistles on this Rail-Road sound effect record

SEE all the LIONEL TRAINS and accessories in the new catalogue

ALL FOR ONLY 25¢

LIONEL TRAINS, P. O. Box 312,
Madison Square Station, New York, N. Y.

Please send me special Lionel Train catalogue offer, postage prepaid. I enclose 25¢ to cover postage and packing.

1. The new 36-page full-color Lionel catalogue.
2. The new 5½" double-faced record* of whistles, bells, railroad sound effects and Diesel horns.
3. 10 full-color miniature billboards.

Name_____

Address_____

City_____ State_____

*Plays on all 78 RPM phonographs except some spindle or automatic changers.

"They don't look like railroad torpedoes to me!"

up for some time before he was rewarded.

The section foreman had a gasoline motorcar to use in taking his gang and tools to and from work. One night the roadmaster was hiding back of the water tank when he heard a motor car approaching. It stopped about 300 feet from him. There were three men on the car and a carcass of beef. The roadmaster waited without being seen. One man, who proved later to be the local butcher, left and in a few minutes returned with a team and spring wagon, loaded the beef onto it and drove over to his shop. The section foreman and the other man put the motorcar away in the section toolhouse.

The roadmaster caught the next train to the division point and next morning there was a conference between the chief of the railroad's special agents and the railroad's superintendent and roadmaster. It was decided to turn the entire case over to the New Mexico State Cattlemen's Association, which was done that very morning. As usual there was a report from the section foreman that some train had killed a steer at a certain milepost location and that he had skinned it, hung the hide on the fence and buried the carcass. His report was turned over to the Cattlemen's Association. They proceeded to where the corpus delicti was supposed to be buried, dug down and found some old ties there. They arrested the foreman, one of his men, the local butcher and the night operator. The local butcher, the section foreman and his laborer got 15 years in the penitentiary; the night operator got five years free board and room at the same hotel.

The night operator was involved because he informed the other three about the movement of trains so they would have time to do the butchering act. It never did come out at the trial how the Cattlemen's Association found out about the racket, a pretty well-paying scheme while it lasted, but this is another case to help prove that crime does not pay.

UNDERSTAND?

A car is a car and a rail is a rail.
A poem's a poem; a tale is a tale.
A shack is a shack and a switch is a switch.
A fill is a fill and a ditch is a ditch.
But somehow there's something that gives them a soul
When blended into a conglomerate whole
And men in retirement are still with the crew—
I don't understand it—be damned if I do.

Ex-hoggers, OSers and rocking chair brains
Are ever involved with dispatchers and trains.
They're racing for sidings, repeating 19s
Or bouncing in crummies through yesterday's scenes.
They're up in Seattle; down Mexico way,
K. C., Sacramento or Chesapeake Bay,
But letters inform me they're still with the crew—
I don't understand it—be damned if I do.

You'd think they'd be happy away from it all,
In peaceful seclusion with never a call.
You'd think they'd be glad, as they're lolling at ease,
To know they've got freedom to do as they please.
With me it is different, you see, there's a draw
That pulls me relentlessly into the maw.
I could keep a-lyin' but, brothers, I won't—
I do understand it—be damned if I don't.

Charles D. Dulin

ow the biggest jigsaw puzzle in the world gets put together!

• Putting together all the good things that go to make America's standard of living the highest in all the world calls for a mighty job of transportation.

And that's a job for America's railroads!

For only the railroads—with the tremendous capacity and high efficiency made possible by trains of cars on tracks of steel—can do it. The railroads link farm, mine and forest . . . factory, foundry and warehouse . . . with homes in cities, towns and villages in every corner of the nation.

In doing their job, the railroads move *more tons* of freight—*more miles*—at a *lower average charge*—than any other common carrier transportation system in the world!

Association of American Railroads

WASHINGTON 6, D. C.

COMMUTING

MELVIN KRAMPF

LO, THE POOR commuter! He lives up to 60 miles from his business and usually he is at the mercy of train schedules. He is the slave of his watch. He is harried, bullied, subjected to the slings and arrows of outrageous fortune as probably no other businessman on earth.

Usually he is resigned to the hardships of racing for the 7:41 and hurrying back to get the 5:24. He has become the butt of jokesters and cartoonists. He even endures the periodic blasts aimed at him by railroad brass who hold him up to

on the NEW YORK CENTRAL

Daily The NYC Performs a Transportation Miracle Handling Gotham's Thousands of Suburbanites

scorn after accountants have tallied the annual financial score and find that the business of transporting him is unprofitable.

In the New York City metropolitan area he is the typical commuter, if there is such an animal. All the good and all the evil of this passenger system is summed up in him. Literally millions pour into the city five mornings a week and dash out again in the evening, creating a transportation problem unequalled anywhere else in the world. As a vast majority of New York's commuters depend on the facilities of a handful of railroads, he is a railroad headache of the first magnitude.

Some railroads handle the problem well. Others not so well. Commuting ranges from very bad to very good. Some roads are in the business of transporting suburbanites grudgingly, to comply with legal obligations. They give poor and indifferent service. They shove their poorest equipment in. Sometimes, it seems, they train their employes to kick him around. Through trains, freights, almost any other kind of traffic gets preference

Cold Spring
West Point
Garrison
Highland Falls
Cragston-on-Hudson
Manitou
Fort Montgomery
Bear Mountain
Iona Island
Jones Point
Peekskill
Tompkins Cove
Montrose
Crugers
Stony Point
West Haverstraw
Haverstraw
Oscawana
Croton-on-Hudson
Harmon
Ossining
Congers
Scarborough
Valley Cottage
Spring Valley
Suffern
Philipse Manor
Nyack
Nanuet
West Nyack
Tarrytown
Blauvelt
Orangeburg
Tappan
Irvington
Sparkill
Ardsley-on-Hudson
Dobb's Ferry
West Norwood
Harrington Park
Hastings-on-Hudson
Greystone
Ridgewood Jct.
Haworth
Glenwood
Yonkers
Dumont
Paterson
Bergenfield
West Englewood
Ludlow
Mt. St. Vincent
Riverdale
Teaneck
Van Cortlandt
Spuyten Duyvil
Hackensack
Bogota
Marble Hill
Inwood
Garfield
West View
University Height
Passaic
Ridgefield Park
Fort Washington
Little Ferry
High Bridge
Sedgwick
130th St.
138th St.
125th St.
Morrisania
Melrose
BOROUGH OF THE BRONX
Mott Haven Jct.
Port Morris
Belleville
North Bergen
60th St.
BOROUGH OF MANHATTAN
Weehawken
Willow Ave.
Hoboken
Harrison
42nd St.
30th St.
Grand Central Terminal
National Jct.
Jersey City
New York
St. Johns Park
Cortlandt St.
Newark
Bayonne
New York Bay
Newark Bay
Jamaica
LONG ISLAND
Valley Stream
Carmel
Tilly Foster
Putnam Jct.
Crafts
Mahopac
Brewster
Lake Mahopac
Croton Falls
Baldwin Place
Lincolndale
Purdy's
Granite Springs
Golden's Bridge
Amawalk
Yorktown Heights
Katonah
Croton Heights
Croton Lake
Croton
Bedford Hills
Kitchawan
Mount Kisco
Millwood
Chappaqua
Briarcliff Manor
Pleasantville
Graham
Thornwood
Hawthorne
Mount Pleasant
Kensico Cemetery
Valhalla
CONNECTICUT
East View
Beaver Hill
Elmsford
Worthington
White Plains North Sta.
White Plains
Woodlands
Ardsley
Hartsdale
Stamford
Port Chester
Chauncey
Mount Hope
Nepera Park
Gray Oak
Crestwood
Neppern
Tuckahoe
Bryn Mawr Park
Bronxville
Floetwood
Dunwoodie
Mount Vernon
Lincoln
Wakefield
Woodlawn
New Rochelle
Williams Bridge
Botanical Garden
Fordham
183rd St.
Tremont
Claremont Park
Long Island Sound
Oyster Bay
Fort Washington
NEW YORK CITY
AND VICINITY
Scale of Miles
0 1 2 3 4 5 10
Hudson River
Shore
York
New
West
Harlem
N.Y.C.
N.Y.N.H.&H.R.R.
Lake
Croton
Millwood
Tappan
Erie
L.I. R.R.
N.J. & N.Y. R.R.
D.L. & W.
C. of N.J.
Hackensack
Passaic
Newark Bay
Jamaica
Valley Stream

over the rickety, rheumatic equipment used for commuters. It is a headache, both to the railroad and to the people it carries.

Commuting on the New York Central, however, is something else. Whether it's as good as the New Haven's, we'll leave to the New Haven commuter to decide.

This writer happens to be a commuter —New Jersey variety—and when I recently toured the New York Central's lines that span up into Westchester and Putnam counties from Grand Central Station, I turned green with envy. It was like riding the *Twentieth Century Limited* after years of stringing along with the Toonerville trolley. I rubbed my eyes when I saw the streamlined, air-conditioned, smooth-riding new multiple-unit cars. I couldn't believe trainmen could be so courteous and efficient.

Some commuters related how trainmen treat them, especially those who are a bit hazy about just where they must get off to stagger into the arms of their spouses. They need not worry. The trainmen will see that they are deposited at Yonkers, Fleetwood, Bronxville, Harmon or wherever they live.

It is contrary to rules, but the commuter on the Central need not worry if he fails to bring his wallet along. Some roads make the commuter pay extra fare or get off, but on the Central the trainmen seem to know who is a commuter, and no fuss is made if he forgets his ticket once in awhile. The trainmen ask only that the commuter be as unobtrusive about it as possible since there may be a company man nearby.

ACTUALLY the Central runs not one but three commuter lines into Westchester and Putnam counties: the Hudson Division, which takes the main line up to Peekskill; the Putnam Division, weaving up to Brewster after running through Bryn Mawr, Ardsley, Elmsford and Lake Mahopac; and the Harlem Division, to Golden's Bridge through Mount Vernon, White Plains, Pleasantville, Chappaqua and Mount Kisco.

The three divisions not only traverse some of the most beautiful and cultivated country in the United States, but they are the main transportation facilities in the richest suburban area in the world. Individually, these commuters are middle class workers. Collectively, they are misrepresented as a monied myth.

Running any railroad, from a short haul to the vast operation out of Grand Central, is a complex business, but when you consider the problems involved in integrating several hundred commuter trains into mainline operation of the New York Central, you have a problem to tax the best brains in the railroad world.

Spanning out across the country, from its great New York terminal at 42nd Street, and its enormous traffic 24 hours a day, 7 days a week, 365 days a year, the Central moves more than 550 units a day, often under one- and two-minute headways.

Such crack trains as the *Twentieth Century Limited,* and *Commodore Vanderbilt* must be dispatched and arrive on the split second, so to speak, while hundreds of commuter trains must depart on time and arrive pretty close to schedule lest a big chunk of the business life of New York City be disrupted—to say nothing of the freight that must be shunted to and from the West Side yards and the mail and baggage which flows back and forth. It is a monumental task that demands the best railroading.

Other cities have their busy terminals, with steam, electric and Diesel units moving in and out of town, to the delight of those who love railroading, but most New Yorkers seldom see the Central at work and are sublimely unconscious of it as they go about their business amid the shadows of the great buildings. A beehive is constantly buzzing under their feet, unseen, unheard, except for a rumble now and then—a tremendous job, quiet, unobtrusive, efficient. Underneath Park Avenue, with its great hotels, swank apartments, and towering skyscrapers, a railroad operation of such complexity as to defy description goes on around the

To avoid rush, some methodical commuters line up early at upper level windows once a month, shell out ticket money and . . .

clock. And in its stride the Central transports the commuter to Westchester and the business tycoon to Chicago and beyond. Its arteries carry a vast flow of manufactured goods from Gotham to many a city and hamlet in the nation, and return food and goods for millions in the second largest city in the world.

Standing in cathedral-like Grand Central Terminal, with the sun slanting through the windows high overhead to create magnificent patterns, I was impressed and awed. Here is the Cathedral of Transportation—personified and deified, if one may so speak. Here is the best and most modern means of travel yet hit upon by man, aircraft not excluded.

But the Central offers some startling contrasts too—from air-conditioned MU trains on the Hudson and Harlem Divisions to the 19 of 21 air-conditioned coaches quietly provided on the ancient Put; from powerful Diesels to oldtime electric engines reconditioned to haul the latest in commuter and name trains from Harmon to great Grand Central Terminal.

As the map shows, the Central's commuter lines spread into Westchester and Putnam counties like a three-pronged fork with the handle at 42nd Street. A fourth commuting prong is the West Shore Division, a forgotten son serving commuters from Haverstraw, N. Y. through to Weehawken, N. J., where ferries connect with 42nd Street. An unrelated fifth prong stabs towards Connecticut via the New Haven, which uses Grand Central facilities and New York Central trackage to Mount Vernon, N. Y.

The west fork, the Hudson Division, sweeps up the river via the mainline and terminates at Peekskill, although the Central contends that division commuting actually extends as far upstate as Poughkeepsie. This division serves such picturesque communities as Riverdale, country life within the city limits; Yonkers,

the fifth largest city in the state; Tarrytown, home of the Rockefellers; Ossining, site of Sing Sing Prison; Harmon, with its complex yards where the Central switches from electric to steam and Diesel, and Peekskill, recently blessed with *Beeliner* commuter service.

The middle fork, whose actual start is Sedgwick Avenue in the Bronx, is known as the Putnam Division—or the old Put to thousands of railroad men and dwellers along the line. The Put from High Bridge to Brewster is a somewhat picturesque, independent, asthmatic old line converted to Diesels only a few months ago. Commuters find it slow and circuitous, so much so that residents of Briarcliff Manor and Bryn Mawr find it simpler to drive to nearby Ossining and Yonkers and travel on the Hudson Division. The Put's shortcomings, if you want to call them that, stem from the fact that it traverses one of the few sparsely inhabited regions in the metropolitan area, east of the Hudson anyway. It was one of the last steam lines operating bravely in the very shadow of New York's skyscrapers, a partner in antiquity with the West Shore Division, which too has started Dieselizing. Unlike her sister divisions, the Put serves strange and esoteric communities and stations most New Yorkers have never heard of, Dunwoodie, Nepperhan, Nepera Park, Mount Hope, Kitchawan, Amawalk.

East fork, and busiest of the three divisions, with nearly 200 trains daily is the Harlem Division, serving the swankiest, richest and most thickly populated part of Westchester. This section of Westchester literally crawls with bankers, brokers, business tycoons, lawyers and junior executives fresh out of Harvard and Dartmouth. The Harlem Division serves such well-known towns as Scarsdale, Bronxville, Tuckahoe, Hawthorne, White Plains, the county seat, Chappaqua and Mount Kisco. This division is to New York what the mainline is to Philadelphia, and naturally it rates the best.

Later in this story I'll return to these three divisions with some historical data and more detailed information, but first

Continued on page 22

. . . then stroll for trains to take them from Grand Central to homes and apartments in Westchester and Putnam Counties

Summer and winter, thousands storm bastions of New York Central's famous terminal, pause momentarily to gaze at camera manufacturer's latest color mural, then sprint Dagwood-style for 5:06, 5:54 or 6:31

Two-thirds of trains on Central's three hinterland divisions aren't worth writing home about, but don't tell it to fortunates who ride classy MU cars. Old "T"-type, box-cab electrics perform yeomanly in shadows of huge Kingsbridge VA Hospital near Marble Hill on Hudson Division to Harmon

here's an insight into the rich-uncle treatment the Central bestows on the Harlem Division.

WHEN the Central received the first of its new 100 air-conditioned electric-powered, self-propelled MU cars in mid-1950, it placed them on the Harlem Division, the first run being made from White Plains to New York City. Such cars, costing a total of $11,000,000 and representing the largest single order of its kind ever made by any railroad, now have been placed in service on the Hudson Division, too. Not 100 percent by any means, of course, old coaches still being used steadily on other trains.

The air-conditioning units on these cars alone accounted for $10,000 of the $110,000 each car cost. These sleek olive coaches, 85 feet long—16 feet longer than older units—have automatic heating control for winter; constant voltage, fluorescent lighting, double-pane safety picture windows, electrically-cooled drinking water, wide luggage racks, rubber tile flooring, tight-lock couplers that improve riding, rubber-cushioned draft gear and roller-bearing axle journals. Like many of their older sisters, the seating arrangement is three-and-two, as long study by the Central has disclosed that this type of seating insures maximum seats per car, 130. Quite a contrast to the newest New York City subway cars which provide only 20 perecnt seating capacity during rush hours. Commuters expect to sit when they ride—subway riders are surprised when they get a seat! A nice contrast in transportation.

In announcing the new cars and the seating arrangements the railroad said: "The Central decided on this arrangement as the most practical answer to the

riding needs of a growing Westchester County after studying the advantages and disadvantages of all types of commutation cars. The present high frequency of trains in and out of Grand Central Terminal during rush hours precludes adding more trains; platform limitations make it impracticable to add more cars to present trains; so that the problem, answered in the new coaches, was one of creating additional seats per car while improving seating and riding comfort as much as possible."

Bodies of the new cars are of high-strength alloy steel, with dark green sides and black roofs. Gold paint is used for decorative striping above and below the windows. Headlights and marker lights are recessed within the car body. The tight-lock couplers and rubber-cushioned draft gear connect the cars into a slack-free operating unit and virtually eliminate most jars and jolts—as any traveler can testify. The cars have electro-pneumatic brakes, improved trucks and springs and improved controls that give twice as many accelerating steps as those on older MU units.

These 100 new coaches from the St. Louis Car Company created a new standard in handling suburban traffic. One-third of the Central's commuters ride in these classy cars, used in solid trains to take advantage of special operating features. There are 47 such trains every weekday, 38 on Saturdays and 34 on Sundays.

In addition, the Central has augmented such service by modernizing 50 old

As great metropolis closes skyscrapers for night, suburban dwellers jam into trains taking them out of cement canyons, past Christmaslike pattern of signal lights at Mott Haven in the Bronx

All photos by New York Central

coaches for the territory north of the electrified Hudson and Harlem. Thorough renovation included air-conditioning, double-panel safety windows, wide luggage racks, bright lighting, hot running water, liquid soap and linoleum tile flooring. These rebuilds serve such communities as Pleasantville, Chappaqua, Mount Kisco, Pawling, Millerton and Chatham on the Harlem Division, and Peekskill, Beacon and Poughkeepsie on the Hudson Division. Pawling, by the way, is considered by the Central as the end of its Harlem commuter runs, although closer Golden's Bridge is more likely in practical consideration.

An interesting observation of Central commuter service was made last summer by E. Alfred Seibel of Croton-on-Hudson:

"For years a commuters' club car operated between Harmon and Grand Central. In the morning the club car was coupled at Harmon to the head end of Train 194, and in the evening the return trip was made on Train 241. Both trains consisted of standard steel coaches hauled by electric locomotives, and the club car, No. 98, was one of these coaches, but fitted with air-conditioning and club car chairs.

"With the delivery of the new MU cars, Train 241 lost its standard equipment, no longer carrying the club car, No. 98 being deadheaded back to Harmon in an earlier train. But one day a new No. 98 appeared on Train 241. It was another air-conditioned, standard steel coach, but it sported a turtleback roof instead of the standard clerestory; was painted in the same style as the new MUs with yellow bands above and below the windows, and carried third-rail contact shoes. When I investigated I found out that the new club car formerly was reclining seat coach No. 2545, built in 1927, then rebuilt with a turtleback roof somewhere along the line.

"Now the operation of this club car is the same as before, except that the new No. 98 goes into Grand Central in the morning on Train 194 hauled by an electric locomotive and returns to Harmon on Train 241, made up of MUs."

THE HARLEM Division is one of the country's oldest railroads, originating in 1831 as the New York & Harlem and running the length of Manhattan on the West Side. New York was a city of only 200,000, the northern part of Manhattan and what is now the teeming slum of Harlem being little more than prosperous but sparsely settled farmland. From the

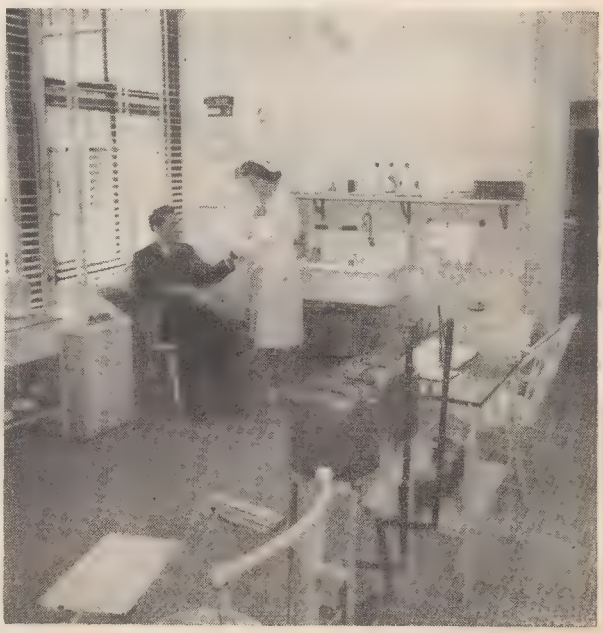
Spuyten Duyvil, *right*, besides being tough to spell, is Hudson Division stop on Harlem River, *foreground*, while tracks, *left*, leading to West Side freight yards are on Hudson River

Battery was a long trip, and the journey to Westchester took the better part of a day.

A group of farsighted—and sometimes ruthless—businessmen and financiers, feeling certain that Manhattan had a great future, secured a charter for the New York & Harlem in 1831 to run from Prince and Centre Streets to the Harlem River. Ground was broken on February 24, 1832, in lower Manhattan and the first run was made in November 1833 to Union Square, about a mile north. The car, horse-drawn, ran in grooved granite blocks to which was fastened an iron rail one inch thick. Soon the road was extended to 23rd Street, but progress thereafter was slow, as citizens objected strenuously to a railroad bisecting the island. Despite this obstacle, and the dif-

Continued on page 28

One-hundred new MU coaches from St. Louis Car Company make up one-third of commuter trains on Hudson and Harlem Divisions, where station posters promote *Times*, *Herald Tribune* and Broadway plays. Occasionally, commuter will be trampled in rush for train, and needs first aid, *below*, in 42nd Street terminal



Sooty Harmon-on-Hudson, where passenger and freight trains change from Diesel and steam to electric locomotives for last miles into Grand Central and West Side Yards

New MU trains, toeing mark at Harmon, earn good will for Central from some 33⅓ percent of commuters, who never had it so good until St. Louis Car Company created smart coaches

ficulties imposed by construction on Manhattan Island's bedrock of granite, a deep cut was blasted between 33rd Street and 40th Street. Then, one of the country's first railroad tunnels, 596 feet long, was built between 92nd and 94th Streets. This was a cause of great celebration, even by those who had raised early objections to the road.

In 1837 the road was opened from Walker Street to 125th Street, using a single track. It proved so popular that a second track was laid a year later. In 1840 permission was secured to extend the tracks into Westchester, although not even the rashest prophet could foretell that this rustic hinterland would a century later have a population of 623,000, or that many with businesses in Manhattan would live, play and sleep in Westchester, the bedroom of New York City.

The horse car had already become an anachronism, except below 14th Street, where train speed was limited to 5 miles an hour because of the congested streets. Steam began to have its day, and our aforementioned prophet would have been at a loss to prophesy that steam, too, would one day give way to the then almost unknown phenomenon of electricity. As a matter of fact, it would be 1906 before suburban electrification would make its appearance, a great giant that would take over the work burden on the tracks.

A carbarn and shop were set up between 26th and 27th Streets, where locomotives were repaired, horse-drawn cars were assembled into trains and locomotives were attached for the trip north.

Upon the decision to go into Westchester in 1840, the company placed a rickety toll bridge across the Harlem River at 125th Street and laid rails across this makeshift span. Thus was the bastion of Westchester County breached. By 1844 the rails reached White Plains, and subsequently to Chatham in 1852. There they connected with the Boston & Albany, to Albany 130 miles distant.

Almost a century ago, in 1853, the New York & Harlem took a step that was to become a vital factor in the development of the metropolitan area. Recognizing the importance of passenger traffic, the road issued the first commutation ticket, good for six months or a year. In another pioneer movement, it offered 100-trip tickets at reduced rates. The first yearly tickets to White Plains cost $45. Later this was extended to $85. Today unlimited monthly commutation to White Plains costs $17.87, setting the commuter back $214.44 each year.

One of the New York & Harlem's first commuters was Horace Greeley, editor of the *New York Tribune* and author of that famous phrase about going West. He is better known for the phrase than for founding and running one of the first great newspapers of the United States.

Greeley lived in Chappaqua and rode the Harlem daily. No mean critic, he described the joys and woes of the commuter in 1867.

"The Harlem Railroad this day puts its trains on a winter footing and we, as a paying customer, return thanks to the managers for the excellent accommodations we have enjoyed throughout the past summer, and especially for the Mount Kisco train. We lived on this road when it was poor and feebly managed—with rotten cars and wheezy old engines that could not make schedule time; and the improvement since realized is gratifying. It is understood that the road now pays, and, if so, we are glad of it. Judging by the new buildings developing along its line, the increase of business cannot be less than ten per cent annually, which must double its income every few years. A small milk train, run but 100 miles, is understood to earn $1500 per day, and the amount is steadily increasing.

"Railroad management is yet in its infancy; but the advantage of building up local business, instead of competing at ruinous rates for remote traffic, is becoming quite generally understood. Twenty years hence the income of the Harlem will be at least four times its present aggregate, provided a judicious home policy shall meantime be pursued. With an underground track from the Battery to Har-

Steam on Put has disappeared into limbo of locomotives, from Sedgwick Avenue in Bronx, through Yorktown Heights, to Brewster

lem flats its passenger fares would be speedily doubled. Such a track ten years ago would have kept thousands in our State who have been driven over to Jersey by the full hour now required to traverse the space between the City Hall and the Harlem River. With a good underground railroad, the census of 1880 will credit Westchester County with a population of at least half a million, whereof at least Fifty Thousand will visit our city daily."

The Harlem may have been poor and feebly managed, with rotten cars and wheezy old engines, but when Commodore Cornelius Vanderbilt secured control of the road and became its president in 1863, the first steps were taken in the welding together of one of the largest railroad systems in the world. Business began to perk up on the Harlem. A short time later, Vanderbilt bought the Hudson River Railroad and consolidated his holdings into the vast Central System.

Under Vanderbilt and later railroad masterminds, the Central built up its commuting service, with the old New York & Harlem, now the Harlem Division, as the main stem and principal revenue maker. Each month the Harlem Division alone sells over 20,000 commutation tickets of all types while the other two Westchester divisions account for only 8000 together.

THE PUT maintains a simple dignity and pride of operation that would do credit to a larger road. Operating 5 miles into the city limits and having close contact with the great metropolis, the Put nevertheless remains a unique and quaint piece of road, rolling along peaceful countryside that seems to be hundreds of miles from the Roaring Forties. Before Dieselization last autumn the Put used 16 high-boiler Class F12 *Ten-Wheelers* over mostly single track. Though it is an integral part of the Central System, with the dispatcher operating far away in

Grand Central, the Put remains almost an autonomous operation with hand-block signals, Morse code sounders and division crews who concentrate on the operation of their own little railroad and have little to do with their bigger and more bustling commuter divisions on the mainline. The 1600-horsepower *Ten-Wheelers* were especially adaptable to the Put with its sharp curves, as they had a rigid wheelbase of only 15 feet 10 inches and a total wheelbase of only 26 feet 10½ inches.

Just a handful of commuter trains use this little road, which has more than 80 years of colorful history and faithful service. Only 1200 commuters use the Put each month, and they must change at High Bridge or University Heights to electric service into Grand Central.

The Put has atmosphere found nowhere else on the modern railroads serving the metropolitan area. For one thing, trainmen have more than a nodding acquaintance with passengers and take unusual interest—unusual even for the Central—in the welfare of those who use the road

Ten-Wheelers **on Put hauled such morning commuter trains as 7:45 through Kitchawan to Bronx change, before Dieselization**

regularly. Everybody is a neighbor on the Put, possibly because few use it and because of the comparatively rural area it runs through. But even when the Central Dieselized the old Put and retired the 1908 equipment to whatever limbo old railroad equipment goes, those who use the line continued to be neighborly and the trainmen still call most of them by name.

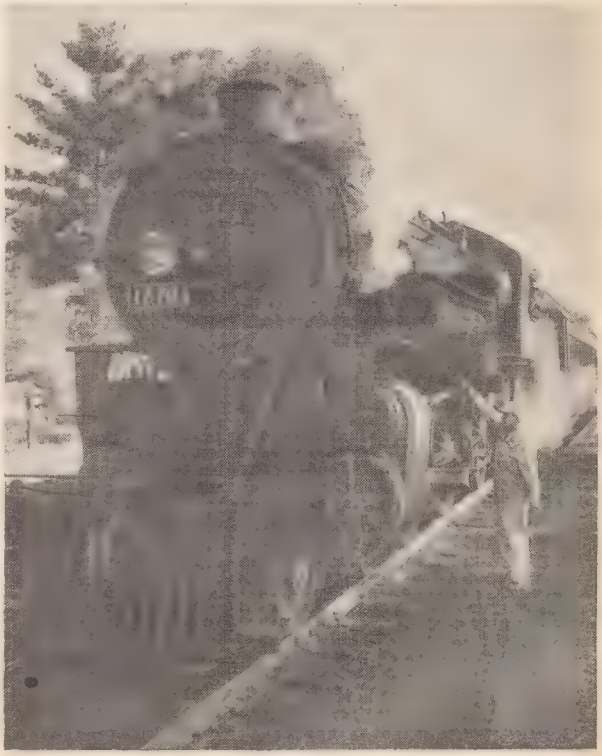
Chick Sales outhouses at the stations, the ancient turntable at Yorktown Heights, crews that lay over, the division closing up for the night after the 10:09 has left Grand Central—the old steam engines and their melancholy voices once echoing among the rolling Westchester hills—all make the Put one of the beloved short runs in the East. Picturesque country dots the 53 miles of line she travels from the Harlem River to Brewster, and beyond. Croton Reservoir, where water is stored for New York's thirsty millions; Lake Mahopac, where many of New York's Jewish population spend their weekends and vacations in the summer time; Tilly Foster, scene of early iron mining, and dozens of other lovely spots.

The Put has been chugging away since around 1870, when grading began at Carmel. Along about that time its builders also constructed extensive docks at High Bridge in the Bronx, intending to provide fast express boat service to Wall Street.

Known originally as the New York & Boston, doubtlessly with an idea of becoming a big road, the road united with the New York, Boston & Northern. The new company, the New York, Boston & Montreal Railway, went bankrupt in 1876 and the New York & Boston separated from it and became the New York, Westchester & Putnam. It was reorganized a year later as the New York City & Northern in its present territory and began local service over the full line on December 1, 1880, with eight locomotives. It was reorganized again in 1887 under the title of the New York & Northern and its rolling stock was increased to 42 passenger cars and 18 locomotives. At long last, in 1894, after it had assumed the name of the New York & Putnam, its financial troubles eased when it was leased to the Central.

One of the puzzling things about the Put is its timetable, which is probably easy for the local commuters, but to me, an outsider, it looks like a brief drawn up by a Washington lawmaker. It has 15 footnotes, and you had better read all of them when traveling the Put, or God knows where you will wind up, or when. But if you think the Put timetable is difficult to follow, try the Hudson and Harlem sheets—they're worse. They have even more footnotes.

Put riders of 7:15 each weekday morning marked time while engineer oiled around, none realizing steam was marking time, too



Where in Suburbia can you watch conductor and fireman push turntable? In Yorktown Heights on Put, of course

THE HUDSON Division has all the class, speed and sleekness of the mainline on a Class 1 road, which it is. The division shares the roadbed with the Central's crack through trains and literally rubs noses with them as they all change from Diesel to electric at Harmon in the shadows of the historic bluffs that guard the majestic Hudson, and the line passes through country that has its roots in the storied days of the Revolutionary War—Yonkers, Dobbs Ferry, Tarrytown, Philipse Manor and like places where some of the most stirring days of the fledgling republic were lived.

Like the Harlem Division, the Hudson has benefited from the Central's improvement in commuter equipment. The division, however, is even more intimately connected with the history of the Central, for it was this road, completed 100 years ago, on October 1, 1851, that first carried railroad cars from New York to Albany and later became one of the earliest units in the Central System.

The first woodburning locomotive to make the journey covered the distance in 4 hours, unheard-of celerity in those times when the palatial river steamboats were the fastest creations of man's engineering science in the Hudson Valley. The brass bell on that first engine sounded the knell of the steamboat era on the Hudson River.

Construction of the Hudson River Railroad trailed more than a decade behind many other railroads in the East, chiefly because of fear of competition with the river steamboats. But agitation for rail service among the winter icebound towns, led by Poughkeepsie, increased steadily until the New York State Legislature granted a charter in May of 1846.

On September 29, 1849, at 7 a.m. the first train was run from 11th Avenue and 31st Street in New York City to Peekskill. The next day this portion of the road was open for business, and service to Poughkeepsie was established, three months later, on December 31, 1849. Then the company chartered the large steamboat *Alida* to complete service through from Poughkeepsie to Albany, and the *Alida* was used from March 11, 1850, during the season of navigation until trains began regular operation between Albany and New York City.

Because of difficulties of tunneling and filling in on the river banks, the 143 miles of railroad had cost more than any other in the United States up to that time, averaging $80,000 per mile. Once in operation it ran more trains than any other road in the nation.

For several years the young railroad struggled bravely, gradually triumphing over the competition of steamboats, but it developed fully in importance only when it came under the control of Vanderbilt, losing its identity when it became part of the New York Central & Hudson River Railroad on November 1, 1869.

On this division the swift, sleek through trains whiz past the stop-and-go commuter trains. The great streamliners, the thundering freights, all are part of the Hudson Division. Electrics, Diesels, MU units, even some steam, all use this division. The alert commuter will see the *Twentieth Century Limited* hauled by an old-fashioned electric whose looks belie its power. It is a 20-year-old Cleveland Union Terminal electric. With all electric units running out of Grand Central, 600-volt DC current at the third rail is the motivating power, although the New Haven switches to overhead trolley when it begins using its own tracks at Mount Vernon.

WHILE electrification of the Central lines in the metropolitan area dates to 1899 when studies were begun—the juice actually was turned on in 1906—the future extension of this type of power is extremely doubtful because of the great initial costs involved.

The first electric locomotive was formally tested on the experimental tracks at Schenectady in November 1904; the first scheduled mutiple-unit trains began service in December 1906, and electric locomotive trains in February 1907. The complete change of passenger-train motive power, extending as far as High Bridge on the Hudson Division and Wakefield on the Harlem Division, was completed in July 1907.

Studies by company officials were made to eliminate the undesirable smoke conditions in the Park Avenue tunnel and, from the start, the program was built up around the movement of trains by electric power, accompanied by an almost complete application of electric power to other purposes around the terminal.

The initial electric zone included about 15 miles of route and 77 miles of single track. As now operated, the electric zone includes 63.73 miles of route and 360.23 miles of single track. The first electric locomotives, known as the Class S locomotives, were delivered during the years 1906 to 1909, a total of 47 units.

In the Central selecting a protected third rail the question of reliability had considerable weight—the fact that this method of power distribution had been thoroughly tried out was regarded with great importance. Furthermore, restricted clearances forbade the use of overhead wires, and legal obstacles prohibited the use of overhead trolley wires carrying high voltages within New York City.

HOW the New York Central has faced up the problem of handling the commuter is an object lesson in railroading and good public relations. I talked with many men and women who use the Central to get to work, and they all agreed that what impressed them most was the unfailing courtesy of train crews.

One woman, a nice-looking redhead of Irish background said she had attended a party in New York after work one evening and drank one too many. She boarded her train, showed her ticket and then went into the ladies' room and fell asleep. She awoke to a gentle knock.

"Who is it?"

"The conductor," the voice on the other side of the door replied. "This is your stop."

When she came out she asked the conductor how he knew she was in there.

"You left your ticket at your seat and I knew you must be in here."

The redhead was flabbergasted, but grateful. She marked up a credit for the New York Central. And so have I.

OHIO MIXED TRAIN

Story and photos by RICHARD J. COOK

ONE OF THE last remaining mixed trains in Ohio, and certainly the best known, is the Akron, Canton, & Youngstown mixed. Well known among Ohio railfans who make a point to ride it en masse every New Year's Day, the train offers to a discriminating traveling public (i.e., the railfans) a carefree jaunt on a local freight, an opportunity to ride in an ancient passenger coach, the privilege of "hitting the dirt" whenever the train makes a station stop or a switching move, the opportunity to pass away the time talking railroading with the crew, and the chance to see rural northern Ohio at its best.

The AC&Y runs 169.3 miles west from Mogadore, Ohio (7.6 miles east of Akron), at a connection of the W&LE District of the Nickel

Continued on page 36

Left: **It takes a steel grip to stand up to the incessant slam-bang of slack action on the tail end of a mixed train.** ***Below:*** **Before the slack rattles out again, time out at Litchfield for a last-minute chat**

Plate; across the state to Delphos and a connection with the Clover Leaf District of the NKP. Although the road derives some of its business from the rural communities it serves, its main function is that of a bridge route offering a high speed through service without the usual delays at the big cities through which its competitor lines run. To get an idea of the rural nature of the road as it runs through northern Ohio's backyard, you have only to reckon with the fact that the largest town between terminals is Medina, with a population of only 4359—all the other towns are much smaller. The nostalgic scene of the baggageman handing boxes through the well-worn door of the old

Above: **At Spencer where AC&Y crosses main line of the Wheeling & Lake Erie, there is usually an opportunity to look around as the head end works the interchange**

coach to the agent at a quaint frame country station is typical of nearly all station scenes along the line.

The mixed train may have anywhere between four and forty freight cars and is invariably headed by a Fairbanks-Morse Diesel and ended by one of the two passenger-baggage-mail coaches. These coaches provide a comfortable ride for the rare passengers and are homes on wheels for the train crew at the far end of their run. They also serve as cabooses and bunk cars. Mixed Trains 90 and 95 run between Delphos and Akron, 161.7 miles, on a leisurely schedule of 8 hours eastbound, and 7¾ hours westbound. If you ride the eastbound train into Akron when it has a good number of cars, you may find that it won't stop at the station on Main Street but will continue on to the yard. From there you will be driven, at the expense of the company, back to the station or to any point in the immediate downtown area. It's obvious that passengers are few and far between.

Below: **Combo 262 has all the comforts of home, and some that home never heard of. . . . Refinements include refrigerator, bunks for outbound crew. Effect on mixed train of dropping mail contract late last year remains to be seen**

Above: **Executive section. Conductor E. E. Barnes does his office work at desk in No. 262's passenger compartment.** ***Right:*** **Diesel 500 on Train 95 at Fisher, interchange with NYC**

The AC&Y is now in the public eye because its president, H. B. Stewart Jr., is heading up the proponents for the controversial Riverlake Belt Conveyor.

In spite of the loss of some freight, the trains still run across the state, stopping at small towns to exchange a few pieces of express or to set out a car or two on an interchange track, traversing all the way a most charming countryside.

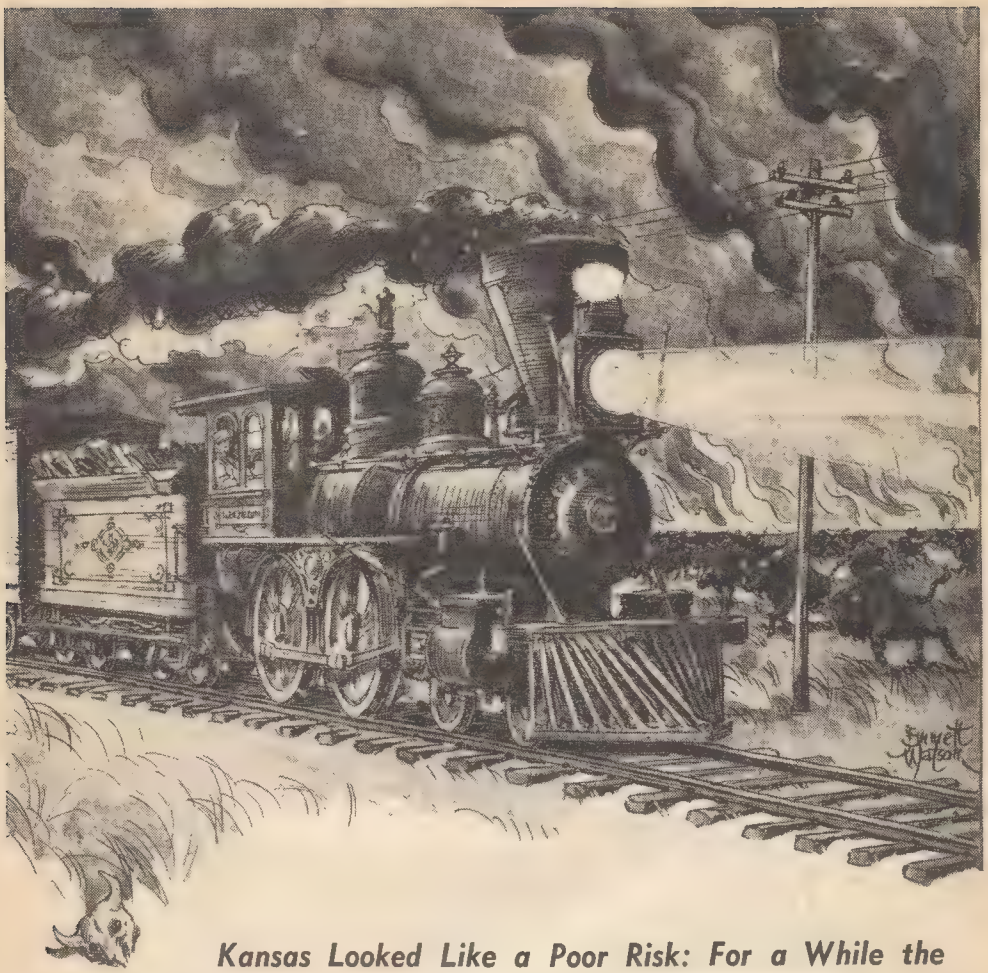
Below: **Superior by direction, Eastbound Freight 92 passes at Carey, Diesel 503 on head end. Big-time shipment in gondola is steel sheets for St. Louis.** ***Right:*** **Contented teakettle simmering in afternoon sunlight,** ***Mikado*** **402 stands by as relief and switching engine**

Conclusion

The Land Grant Legend

H. H. GROSS

WHEN THE old Santa Fe Trail disappeared under the tracks of the Atchison, Topeka & Santa Fe Railway Company, the Missouri River moved down to the Gulf of Mexico and the Pacific Coast came inland to mushrooming towns and cities whose very names were made up by the construction engineers who laid them out. Topeka, near the eastern terminus in Kansas, was at the intersection of two great continental trails, the Fort Leavenworth-to-Santa Fe and the Independence-to-California. Santa Fe, end of the line as it was originally planned, was probably more famous than any other commercial town in America. Here Indians had exchanged salt and turquoise before the white man came.

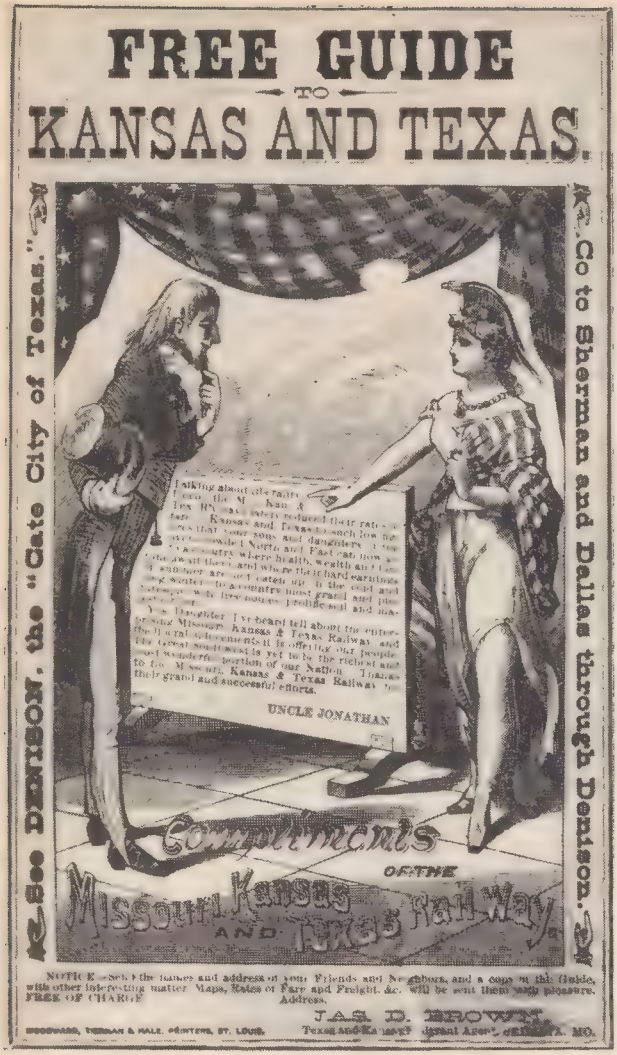


Kansas Looked Like a Poor Risk: For a While the Santa Fe Was Hauling Ruined Families Eastward Faster Than It Could Induce Hopeful Settlers to Go West

Santa Fe was the site of the first gold rush on the continent and of the first immigration—130 Spanish colonists from old Mexico following the tragic path of Coronado's Indian-burning soldiers.

In 1821, Captain Bucknell's prairie wagons had rolled south from Missouri and brought back 15,000 gold dollars in exchange for a shoddy $3,000 worth of American goods. General Kearney raised the Stars and Stripes above the town in 1846, and four years later New Mexico was "free soil territory" and the white hope of anti-slavery forces. The Union Pacific crawled across Nebraska. The moment had come when the iron horse on steel rails would make its bid to displace the stage coach and the pony express on the Santa Fe Trail.

In 1859, when the state of Kansas chartered a railroad to run "from Atchison on the Missouri to Topeka in the direction of Santa Fe, New Mexico," and granted it land to the width of 100 feet along the route, there were less than 2 million people in all of Kansas, Nebraska, Californi



Courtesy: MKT Railroad

Uncle Sam's niece was bragging probably less than she intended when she pointed out that "the great Southwest is yet to be the richest and most wonderful portion of our nation." But for a while, half-starving settlers belied her claims

New Mexico, Arizona and Texas. Population for the seven states had not increased much in 1868 when Tom Holliday at last got the road under way with a bridge to make connection with the Kansas Pacific across the Kaw River. True, the gold rushes were on, and four years earlier, despite the Indian wars, more than 150,000 people had left off hugging the shores of the Missouri to move out onto the plains. Holliday, if he reached Santa Fe, had 850 miles to go through country that had seen no white faces except those of the trapper, the miner, the cowboy and the soldier. Between Topeka and the dubious Kansas-Colorado line there were about 5,000 people, far too few to support a railroad. As for the land itself, of which the Santa Fe would claim 3 million acres by March of 1873, that was worth 4 cents an acre in actual cost to the government and nothing at all to anybody else unless the railroad went through and brought in settlers.

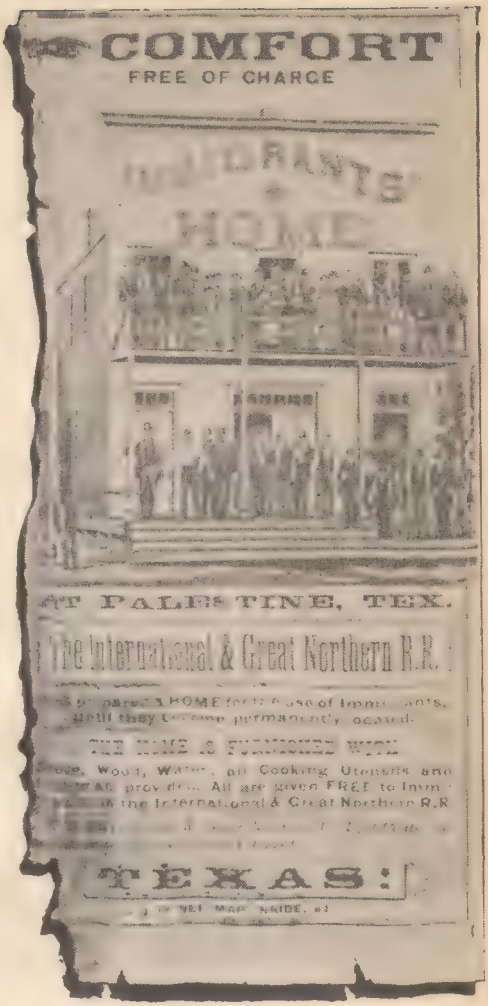
The first cars rolled in 1869 between Topeka and Wakarusa, thence into the coal sections around Carbondale. By September track was laid into Burlingame and on to the old Santa Fe Trail. Across the county line in Emporia, business began to boom. "Lots that went begging at $500 are readily gobbled up at $1000 now," wrote a local citizen. "About a hundred men with money are here awaiting the coming of the railroad."

Through Doyle Creek, renamed Florence, to Newton was 135 miles. In April of 1871 two lone pioneers held sway in the latter town. Six weeks later, the population was 2000 and with the arrival of the grading gangs, 6000. At Newton, the Santa Fe met the old Chisholm Trail over which millions of longhorns had plodded to winter pasture in the Flint and Osage Hills. Up to now the cattle had gone to market via the Union Pacific from Abilene. Wichita and the Santa Fe cut in nearer the bluegrass.

The Santa Fe was going to deal gently with cattlemen, even to shutting off steam and drifting silently past the easily-frightened herds; but at the same time it had an eye out for the good of the nester, or

Courtesy: MoPac Railroad

I&GN literature from 1877 shows immigrant's home where Texas homesteaders could live free until they got settled. To judge from the illustration, business was brisk; but for some time the traffic went both east and west



small farmer, whom the cattlemen hated. Through connections with the New England Emigrant Aid Society of Boston, the Vegetarian Settlement Company and dozens of other similar groups, the railroad arranged to move farmers, with their equipment, stock and furniture, in boxcars and coaches. Long before their fences cut off the trail herds from Newton, Tom Peter, construction engineer, ran a branch line down to Wichita to catch the herds there.

Westward, the line ran north of the Arkansas River bend, over flat prairie. With 10 months to go before the land-grant deadline, the road had 271 miles of track to lay across wilderness. Past Hutchinson, into Great Bend, on past Larned and four miles across the state line to please a government surveyor who disagreed with the railroad opinion of where the boundary was. The Santa Fe was now 470.5 miles long. Newspapers over the country hailed State Line City (now Sargent) as "the western terminus of the line", and mentioned that 30,000 homesteads of 160 acres each were now opened up for the immigrant and settler.

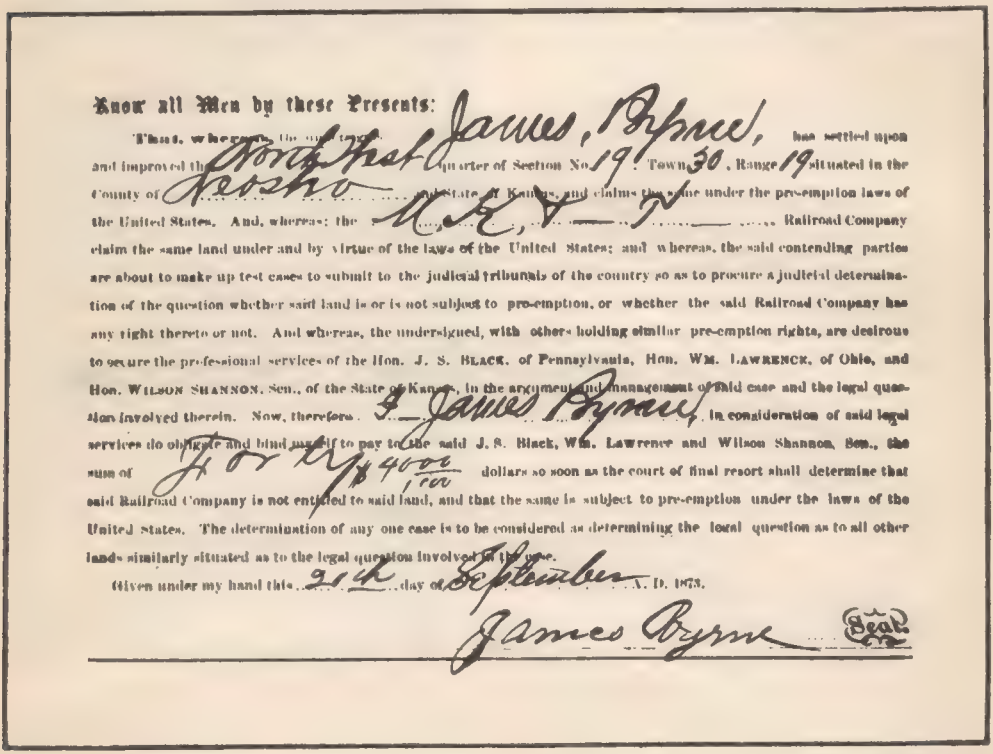
The new line hadn't yet done much about colonization. It was too busy in 1871 building the long delayed route to Atchison, fighting the gumbo around Carbondale, warding off Indians and buffalos from its lonely prairie stations, and stamping out the ever-present menace of fire. Then came the panic of '73. Jay Cooke and the Northern Pacific went under, and so would the infant Santa Fe have done, especially in '74 when the grasshopper plague hit Kansas, except for Dodge City.

Since '72 righteous trainmen had called the town a hell—and that it was with its saloon-keeper aristocracy, its crooked politics and its floating population of liquor-crazed, trigger-happy gamblers and murderers. Still, in time of stress Dodge City was the salvation of the struggling road. Indirectly, by disposing of nearly 75 million buffalo in ten years' time, it cleared the plains for settlement. Meanwhile, it furnished the Santa Fe with enough traffic to keep it alive. In '73 a quarter of a million hides went east behind the long trains of "live-stock palace cars." A little later the Santa Fe sent a souple of ex-graders, the Masterson brothers, in to clean up the town itself, and the place began to be suitable for respectable settlers.

But to most people Kansas still looked like a miserable place to come to. Grasshoppers had stripped the land bare. The few farmers deserted their claims to in-

vade the settlements looking for work and food. The railroad was hauling ruined families eastward faster than it could bring hopeful colonists out, and paying for their passage out of its own pocket. The trustees were ready to give up in despair and turn the line back to the wilderness. The 3 million land-grant acres, most of them consisting of "in lieu" lands in the Arkansas Valley looked like nothing but a liability. To sell such land was hopeless.

veyed the Arkansas Valley for colonization in 1870. The thousand-mile valley had 2019 people in it when the railroad first reached it. Six years later, in spite of panic and grasshoppers, the population numbered 45,868; in '77 they were 67,450 and the tilled acreage had risen from 7000 to 600,000 acres. The farming graph throughout the state rose proportionately. In 1865 Kansas could count about 136,000 inhabitants. In eight years, to the amaze-



Know all Men by these Presents:

That, whereas, the undersigned James Byrne, has settled upon and improved the North East quarter of Section No. 19, Town 30, Range 19 situated in the County of Neosho, and State of Kansas, and claims the same under the pre-emption laws of the United States. And, whereas: the M. K. & T. Railroad Company claim the same land under and by virtue of the laws of the United States; and whereas, the said contending parties are about to make up test cases to submit to the judicial tribunals of the country so as to procure a judicial determination of the question whether said land is or is not subject to pre-emption, or whether the said Railroad Company has any right thereto or not. And whereas, the undersigned, with others holding similar pre-emption rights, are desirous to secure the professional services of the Hon. J. S. BLACK, of Pennsylvania, Hon. WM. LAWRENCE, of Ohio, and Hon. WILSON SHANNON, Sen., of the State of Kansas, in the argument and management of said case and the legal question involved therein. Now, therefore, I, James Byrne, in consideration of said legal services do oblige and bind myself to pay to the said J. S. Black, Wm. Lawrence and Wilson Shannon, Sen., the sum of Forty dollars per 100 dollars so soon as the court of final resort shall determine that said Railroad Company is not entitled to said land, and that the same is subject to pre-emption under the laws of the United States. The determination of any one case is to be considered as determining the legal question as to all other lands similarly situated as to the legal question involved in the case.

Given under my hand this 21st day of September A. D. 1873.

James Byrne Seal

Courtesy: MKT Railroad

Legal fights between the railroads and settlers were common in the 'seventies. Reproduced above is instrument executed between a settler in Neosho County, Kans. and lawyers he hired to defend his title to land grant against infant Missouri, Kansas & Texas Railroad

The only thing to do with it was borrow on it; and even that looked like a faint hope. Finally, however, the managers found a bank intrepid enough to loan the railroad $1.25 per acre on the land. The total was barely enough to rebuild ruined track.

AS A SORT of desperate last move, the company now opened a land department under D.L. Lakin who had surment of everybody, the railroad had upped the figure to 700,000.

When Lakin resigned due to illness, A. E. Touzalin took over the land department for two years. Then Touzalin went over to the Burlington, and Colonel A.S. Johnson became land commissioner, and served in that capacity until 1890, just eight years before the land department was abolished as no longer necessary. In its early days, the department functioned

in spite of grasshoppers, depressions, buffalo stampedes and the always present menace of drought. Its main difficulty was to keep the land sold—such tragedies as the Syracuse failure, which obligated the road to free-haul 15 families of defeated colonists back to the East were expensive to the reputation of the land, and set a precedent for easily-accepted failure among settlers. The exaggerated promises of other railroads would not do for the Santa Fe; its sales literature had to tell the truth about Kansas insect plagues. The only inducements the Santa Fe allowed itself to offer were special colony trains, reduced fares, and low interest rates on 11-year mortgages.

He had the vision, sold his dream to those who had the money. Engineer Theodore Dehone Judah worked unceasingly for the idea of a transcontinental railroad until it was taken up by wealthy San Francisco merchants. He died six years before Promontory, Utah ceremony

Eastern colonists were slow to come into Kansas. Touzalin shipped hundreds of circulars and pamphlets to Germany, Holland, Sweden, France, Denmark and Russia; and then, realizing that many a prospective buyer in those countries could not read, he made Carl B. Schmidt, himself a German immigrant to Kansas, General Foreign Colonization Agent.

Schmidt got results. In 1873, he brought a colony of German, Austrian and Swiss families to settle at Ellinwood. German-Russians established the Gnadenthal Colony at Great Bend; and further west, at Offerle and Spearville, Germans located in great numbers. In Chase County, the Santa Fe sold 72 square miles of pasture to the Western Land & Cattle Company, a British organization which paid $150,000 for the land.

Pawnee Rock was founded in 1874 by Swedish immigrants. Schmidt was then in Russia, after a short stop in Sweden, to organize colonists among the Mennonites. The earliest Mennonite immigrants to America had come here from Germany in answer to an invitation from William Penn. From Pennsylvania, their reputation as farmers and colonists had spread over the entire country; and in 1873 and '74 half the western roads were bidding for Mennonite settlers. The Burlington, Northern Pacific and Great Northern had already received sizable numbers of them from Russia. Braving the Czar's secret police system, which persecuted the religious sect yet refused to allow them to emigrate, Schmidt went straight to the source of supply.

Meanwhile, back in Kansas, Cornelius Jansen, Mennonite leader and former Prussian consul to Russia, had purchased nearly 100,000 acres of land in Marion, McPherson, Harvey and Reno counties. In September, 1900 Mennonites, all of whom had been forewarned as to Kansas droughts and grasshoppers, arrived in New York. A few days later, Topeka received the immigrants with a vast celebra-

tion. It is to be suspected that part of the rejoicing was due to the fact that the new settlers brought with them gold drafts worth 2 million dollars. Within the next few days Topeka reaped the rewards of her hospitality in a small business boom.

The Santa Fe itself made no money on the transaction. The road paid for a Red Star liner to bring the colonists' belongings from Berdiansk in Russia to Philadelphia, and hauled them by special train to Topeka. Nevertheless, despite cut-price land and free services, even including a legislative act exempting Mennonites from military duty, the road had made a good bargain for itself and Kansas. In a few years, using the Red Turkey wheat introduced earlier by French settlers but abandoned by them, the Mennonites had built Kansas up to the top of the list of hard wheat states.

They made another significant contribution to Kansas in the introduction of the mulberry, the wild olive and the apricot. Kansas was a treeless state. The Mennonites loved trees, and helped to popularize the new Timber Act. The Santa Fe, seeing the vast improvements shade trees made in the landscape, soon employed a forester to beautify its right-of-way and prevent erosion of the soil. The droughts of 1879 and '80 were less severe due to the more than 20 million fruit trees and 200,000 acres of forest trees planted between '73 and '81 by the railroad and the people of the state. It was not unusual in those years for a single farmer to plant as many as 10,000 young trees in a year. "Beyond the question of abundant and cheap fuel, building and fencing timber," said a brochure of the period, "these groves will superinduce rainfall, temper the February and March winds and give increased equability to the climate."

Below: **How the American dream was carried abroad in an odd mixture of English and German, as colonization agents roamed far afield in search of pioneer material. StLIM&S booklet was printed in 1883**

Courtesy: MoPac Railroad

Die

St. Louis, Iron Mountain & Southern Railway.

Eine kurze Darlegung von Thatsachen betreffs

1,500,000 Acres Land, welche dieser Bahngesellschaft geschenkt worden sind,

mit Angabe einiger Vorzüge des

prächtigen Klimas, guten Bodens, herrlichen Wassers, der großen Fruchtbarkeit, freien Aussicht, der Mannigfaltigkeit der Metalle und des Holz bestandes, sowie der trefflichen Märkte an Bahn und Fluß; zu niedrigen Preisen bei langem Kredit zu verkaufen.

Thomas Essex, Landkommissar, Little Rock, Ark.
H. C. Townsend, General-Passagier und Ticket-Agent, St. Louis, Mo.
W. H. Morton, Emigranten-Agent, Union Depot, St. Louis, Mo.

Nevertheless, '78 and '80 were bad years. The road had survived the Raton Pass struggles and the Canyon battles of '78 and '79 and was now ready to think of moving settlers into New Mexico and Colorado. Yet back in Kansas it was being forced to haul them back East—free. Those who stuck it out and waited for the rains had to be furnished with seed by the railroad before they could start another crop. True, 1400 new homesteaders showed up en masse at the land offices in Topeka and

Courtesy: MKT Railroad

Old woodcut shows first MKT depot at Parsons, Kansas. It was built in the 'seventies, when many towns in the Southwest were towns by virtue only of being locations for railroad stations and other railroad buildings

stayed to buy 60,000 acres north of Great Bend; but a single incident of this sort, however surprising and welcome, was only a drop in the bucket.

Prospects for colonization of New Mexico did not look good; the land was bare, given over to the cattlemen who resented the nester, with little agriculture and no industry. Colorado looked a lot better to the Santa Fe business managers. There was timber in the mountains, ranches producing sheep, hides, wool and cattle for shipment; there was coal around Trinidad, and a mining boom going great guns at Leadville.

While it continued to concentrate on its new two-way freight hauls, the Santa Fe did not neglect the possibility of recruiting more settlers and miners for Colorado. Tourists got special attention, too, from the Land Department. The Santa Fe, it was announced in the new publicity organ, *The Rocky Mountain Tourist and San Juan Guide,* was "the land hunters,' buffalo hunters' and gold hunters' road."

THE NEXT YEAR, the road spent $34,000 improving the Pueblo line—proof enough that it was making money in Colorado. In 1876 it netted $1,200,000, mostly on its Pueblo-Denver line. Another year, and it laid tracks south, 31 miles to Eldorado.

The dormant plans for the New Mexico line came to life again when, following on the enormous success of the Kansas exhibit at the Centennial Exposition in Philadelphia, Colonel Johnson's department started new land rushes to Kansas. In two years' time the road disposed of 850,000 acres for around 4 million dollars. With what profit was left after paying for chartered steamers, special rates, agents' commissions, cheap lumber and other services to the settlers, the road determined at least to reach its destined terminus—Santa Fe. The Land Department pointed out that Santa Fe's low rates would entice many settlers into the new territory. The charges over the present line as, for instance, from Kansas City to Pueblo, were fantastically low:

$20 per passenger, $100 for a carload of emigrant moveables. Other roads, such as the D&RG, charged $25 for short runs.

The stage coach route into New Mexico was even more prohibitive in cost. But the Santa Fe once let in between the Rockies and Sangre de Cristo, and settlers would be able to pour into the valleys. So said some. Others pointed out that the freighting business of the whole Santa Fe Trail could be moved by the railroad in one week; they didn't believe that settlers would increase much in numbers for a long time to come. But in January of '78 the proponents of the New Mexico extension got $20,000 to make surveys from La Junta to Santa Fe. The money was part of the previous years' sales around Larned and Wichita—60,000 acres at Larned and 40,000 at Wichita.

From Raton Pass crews graded westward from La Junta into Trinidad, up into the volcano country and into New Mexico. Beyond, lay the plains and the great rivers, the Canadian and the Cimarron, and the towns that would grow to be railroad landmarks: Las Vegas, Santa Fe, Lamy and Albuquerque. Beyond, some kept reminding, lay California and the Pacific Coast, the only fitting terminus for a self-respecting railroad. Even this early, the undaunted Land Department harbored the dream of "Santa Fe All the Way." Their optimism proved sound—what was the loss of Leadville to the competing D&RG in comparison with the everlasting mines that lay ahead?

In New Mexico the road's engineers were remaking the old maps. In November of '78, Engineer Robinson wrote to the Santa Fe manager back in Kansas his belief in the possibility of "another Texas" to be obtained from the territory of old Mexico. Let settlers move down into the Gulf country around Guaymas and into Sonora, he said—they would soon "call for another line to the Pacific which can be built by the Santa Fe." A year earlier, Southern Pacific had reached Yuma, Arizona. At the time when Robinson wrote, both Espee and T&P were surveying in the same sections with the Santa Fe, and the Espee was racing to reach El Paso where Texas, New Mexico and Mexico came together on the Rio Grande. It took the Santa Fe until June of '79 to reach Las Vegas, away in the north.

Las Vegas was 44 years old when its first and only railroad reached it. Founded as a refuge for traders' caravans, it languished until 1846 when General Stephen W. Kearney announced to the small and astonished Mexican population that they were American citizens who must take the oath of allegiance which he then and there administered to them from his post on the plaza roof. After this brief flare, Las Vegas relapsed again until the coming of the railroad and the establishment of a divisional headquarters there. The community which sprang up around the station was incorporated in 1888. Gradually the town grew into an important market for wool, hides and pelts and, with the development of irrigation, into the supply center for 47,000 acres of highly productive land.

The railroad was not going to Santa Fe directly. The oldest seat of government in the United States and once the center of trade between Spanish and Indian territory and the States, it was no longer important enough commercially to offer sufficient freight to merit more than a spur line. The Rio Grand Valley south of the old capital was rapidly building up, and besides the railroad was going to need the timber in the Glorietas and the coal at Cerillos.

Engineer Ringman's survey crossed Glorieta Pass at 7421 feet, threaded the valley past Lamy and hit the Rio Grande at San Domingo, to follow it down to Albuquerque. The Santa Fe had no intention of failing the valley settlers who had been promised transportation when they bought their land.

At Canyon City, five miles below Glorieta Pass, the railroad and the old Trail met again. Twelve miles northwest lay Santa Fe. The spur got there on February 9, 1880. A little over 860 miles of continuous track, Santa Fe to Kansas City, spelled the end of the glamourous old

Courtesy: MKT Railroad

As travel to the Southwest increased with the development of that territory, larger stations were needed to take care of rapidly expanding railroad business. Above is second MKT station at Parsons, Kansas

Trail. To the railroad this consummation of Colonel Holliday's dream meant renewed hope and energy. There was money in the treasury. Three years after the first train crossed Raton Summit the Santa Fe returned 164 percent of the investment on the New Mexico extension to its stockholders.

In 1881, the Santa Fe met the Southern Pacific at Deming, N. M. El Paso lay eastward, California to the west. New Mexico was now on a transcontinental line. In that year the territory had a population of 119,565, over two-thirds of whom were either Spanish or Indian. In the following decades, as the railroad settled the area east of the Rio Grande and introduced irrigation into the great river valleys, this proportion would reverse itself until, in 1910 with a population of 327,301 the percentage of white inhabitants would rise to 79.2 percent.

IN 1880 the Santa Fe, together with the Frisco, had taken over the Atlantic & Pacific for a route to St. Louis. Now, track was moving toward the Colorado River, past Winslow, Ariz. By August 21st, 1883, the Santa Fe was running trains from Needles to San Francisco over the Espee track. To reach California over its own line, the Santa Fe would have to build down into Mexico.

Back in Kansas and Colorado, hundreds of new branches were being built to accommodate the influx of settlers. New Mexico was swarming with cattle ranchers, and minerals had been discovered in the mountain sections! Kansas, though, was already calling itself the pivotal state of the Union. Corn was king in Kansas in 1883 when the eight million acres planted to that crop yielded over 172 million bushels—62 millions more than in any other state. The average yield per acre was 36.7 bushels. Astronomical yields were predicted for the day when the state's entire acreage of 52 million should be under cultivation.

Including wheat, oats and other crops, Kansas was cultivating 21,417,468 acres in 1883. Percentage of returns on money invested in these lands were 22¼ percent, higher than that on any other farmlands in the nation. Yet taxes remained extremely low. It was no wonder that emigrants set out for Kansas with a gaiety unmatched by settlers bound for any other place. The Santa Fe's records mention "O Susanna", the old trek song of the Oregon rush, and tell how it was sung in the emigrant cars to the accompaniment

of guitars, violins and bass horns. The oldsters patted their feet in time and some of the younger ones danced in the aisles as the diamond stackers rocked the cars across the prairies to McPherson, Caldwell and Burlingame.

Many of the emigrants brought nothing with them but their old carpet bags—at Kansas City they purchased straw mattresses to spread across the wooden seats at night. The women cooked on the cast iron range at one end of the car, using wood foraged by the men at wayside stops. Strangers became strong friends in a matter of hours and often formed little settlement groups which made good neighbors of them for the remainder of their lives.

For many years the Santa Fe was the one big corporation with which these people dealt. Through the railroad the value of their farms was increased as much as 400 percent in five years. This was particularly the case in Oklahoma, where later on the Santa Fe-controlled A&P pushed west from Vinita in Indian Territory; in south Kansas where the Santa Fe bought the Kansas City, Lawrence & Southern Kansas to link it with its own line at Emporia, in the Panhandle cattle country of Texas and around Fort Worth.

Prior to the '80s Texas had no rail connection with any other state. Houston had four short lines, one of which had its southeastern terminus at Galveston, the richest city in the state. In 1873 Galveston merchants organized the Gulf, Colorado & Santa Fe to run north to Fort Worth and thence to Santa Fe in Mexico. At the time Texas was giving away vast tracts of land at 50 cents an acre. As soon as the Gulf started building, prices rose as high as $5 on the acre. The railroad itself sold 3,554,560 acres for around $211,168. The money was needed for construction. Finances kept the Gulf out of Fort Worth until 1881; but in the next year it extended west to Lampasas and took over the Central & Montgomery in the piney woods section of east Texas. Traffic was scarce, however, due to the Katy rivalry, and the Gulf stockholders made a deal with the Santa Fe, then building south through Indian Territory, to take the Gulf north to Purcell, Oklahoma, to meet the Santa Fe's southbound tracklayers and then turn the Gulf over to the bigger road for $8000 a mile.

The Santa Fe, working south from Arkansas City, had started grading in '86. By September, track was laid 31 miles to White Eagle (formerly Ponca). Three days later, the line reached Deer Creek. Roadmaster S.W.F. Hughes built a house on the site, using old ties as building material, and the line went on, hurrying to reach Purcell by April 20, 1887. They made the junction with the Gulf 106 miles from the Texas line six days late, while a bewildered United States marshal was looking in all the wrong places for a railroad representative on whom he could serve a writ cancelling the charter.

Two years later, when the government opened 2 million acres of Indian Territory for settlement, the Santa Fe ran north and south across the entire tract. The only town then in the area, Oklahoma, or Oklahoma City as it is now called, consisted of the railroad depot, a section house, a water tank, one dwelling for the station master, and three or four small buildings. Texas and Kansas merchants, contrary to the rules of settlement limiting each settler to 160 acres, had already prepared townsite plats, including one for the railroad station known as Oklahoma, when on the morning of April 22 over 40,000 settlers gathered near the territorial line to await the noon signal which would allow them to begin the rush.

Many of the people waiting there had arrived on Santa Fe trains days before and in defiance of soldiers and deputies had attempted to leave the trains and hide out in the timber for a head start on the more patient and law-abiding. At first, federal authorities were able to control these opportunists with ease; but when the news of the merchants' illegal townsite plots leaked out, there was a concerted rush on the line. Repulsed by soldiers, the "movers" waited angrily for the signal. Ninety minutes after it sounded, army and railroad men figured, the first settlers on

the fastest horses would begin to reach Oklahoma City.

The bugle was blown. Within fifteen minutes representatives of a land company, who in theory had traveled 15 miles from the line, were swarming around the Santa Fe depot, directing settlers where to unload their goods. The "movers" and "sooners" had outsmarted the guards, and now, crawling from ditches, dropping from trees, emerging from freight cars where they had been in hiding, they swarmed over the plains.

THE SANTA FE ran eleven trains, carrying 1000 passengers each, and halted them at Orlando, about 50 miles north of Oklahoma City. The Gulf sent six trains up to Purcell. It was 2:05 when the Santa Fe's passengers crawled out of the train windows onto land already claimed by "sooners." By four o'clock so many conflicting claims had developed, and so many elections had been held for so many overlapping groups, that the townsite had several different sets of officials. Six thousand people slept on the prairie that night, and a week later, despite fist fights and a few killings, despite hunger and general unrest, a thousand buildings were on the way up. Soon the Santa Fe was hauling trainloads of lumber to Oklahoma City, Guthrie (once Deer Creek) and Lisbon (now Kingfisher).

Side tracks from Newton to Fort Worth were jammed with cars holding the settlers' possessions, and the demand for building material and food was so great that it was impossible to move them. Seed as well as food was distributed free to the settlers for a time and then distributed at cost on unsecured notes. Ninety-five percent of these notes were afterward paid.

Again, in 1891 and in 1893, the government opened the Indian Territory to settlement. In all, about 69,600 square miles of the best grazing lands on earth were sold to the government by the Indians at about $1.40 and then resold to white settlers at substantial profits. In the political chicanery and dishonesty involved here the railroad had no part. It would have been content to serve the cattle industry already developed in the territory. Events, however, have given it the benefit, with six other railroads, of the agricultural and mineral hauls resulting from large-scale settlement. The Santa Fe began to participate in oil profits in 1905, with a line to Tulsa.

During the early and middle '80s the railroad was doing well on every front except the California extension. At Needles, Arizona, the Espee was doing a mighty job of diverting all traffic either south through El Paso, or to Ogden and Council Bluffs and thence to Chicago. Running its own track from Needles to San Francisco would cost the Santa Fe $38 million. The citizens of San Diego, cheated of a railroad five times since 1845, got together and voted $25,410 in cash, 17,355 acres of land and 458 city lots, including a good deal of water front, to the Santa Fe in return for its promise to build. It took the railroad five years, a rate war and a court battle with the Espee, to reach the anxious port city. And when finally, in 1885, the trains began to roll, it looked as if they might as well run non-stop from Needles to San Diego.

Arizona was no country for settlers. The few who went out to look the land over stared at baking desert and stark mountains where almost the only human habitations were the miserable hovels of the Mojaves and the only living vegetation the spring cactus. Yet west of the Sacramentos hidden fortunes in gold, silver and copper soon began to come to light to attract the miner and the business man, and in the *playas* between Iron Range, Sheep Hole, Marble, Bullion and Calico ranges there were glistening beds of salt and gypsum.

San Bernardino County, into which the Santa Fe had reached from Barstow (formerly Waterman) in November of 1885 promised to be more lucrative. *The San Diego Union,* welcoming the first train, expected only moderate expansion to follow in southern California. "This," says a Santa Fe historian, "turned out to be the understatement of the year."

Photo from W. R. Draper

Wooden railroad bridge was the first structure ever to be built across the Mississippi River. Completed on April 21, 1856, it was replaced by an iron bridge in 1872

Everything was right for a boom. San Bernardino County was about the size of Massachussets, Connecticut and Rhode Island combined, and most of its 20,000 square miles was fabulously good farming soil. Back in the Midwest there was plenty of money for travel, and the Santa Fe was willing to haul anybody from the Missouri River to the West Coast for prices between $15 and, on one day, $1. Visitors poured across the desert in 16-car trains, and rushed back to pack their goods and their families into the special $50 emigrant cars. The Santa Fe even furnished them with shoe-box lunches for the trip—fried chicken and jelly roll put up by Mr. Harvey.

Once settled in the new California country the emigrants seemed to grow rich overnight. Their acres yielded fruits and vegetables in profusion, shipping rates were low, the Eastern market good, and every 10-year-old child could earn high wages to add to the family income. Real estate agents flocked in by the hundreds—as did money from speculators in Rotterdam, London, Paris, Berlin, Brussels and other European financial centers.

In the spring of '87 when the Santa Fe opened its line into Los Angeles, 13 new townsites were staked out along the track. By fall there was one town for every 2600 yards of track between San Bernardino and Los Angeles. Soon there were 36 new towns, ranging in size from 800-acre Lordsburg to 3000-acre Azusa between the Santa Fe and the Espee's parallel tracks. People waited in line 24 hours to buy Azusa lots, and many who didn't wait themselves hired hoboes fresh off the trains to do it for them at $5 a day.

When the valley was filled to bursting, smart promoters turned their attention to the desert. Oranges tied to Joshua trees fooled many prospective buyers who couldn't take the time to get down from the excursion trains (which the railroad obligingly stopped upon the slightest request) to take a closer look at what they were buying. Many people bought from a map—for $1000 an acre—and never even bothered to ride the trains. Some of these speculators resold the next day for half as much again. The others, who were honest in their desire for farming land, went broke trying to cultivate the desert. As the bubble began to burst whole towns went under. By 1899 the boom was over, but thousands of towns and prosperous farms remained to flourish.

RIALTO, settled by Methodists from Kansas; the Quaker city of Whittier: these were two of the towns which survived the crash. Others, like Corono, the "circle city" as it was called from its encircling driveway for fast horses, had more trouble but managed to get back on

their feet. On the whole, the promoter towns, with which the railroad was not connected, failed completely. One of these was Carlton, a town that built a hotel, restaurant, bank and ten houses before somebody took the time to discover that every drop of water used in the place would have to be hauled from five miles away.

Back in the Midwest, the Santa Fe had acquired its own track between Kansas City and Chicago and was grabbing back a good many farmer customers who had gone over to the Rock Island, the MoPac or the Frisco. By 1888, the Santa Fe owned or controlled its own tracks from the Lakes to the Pacific, and could offer settlers the fastest through service and the lowest through rates in competition with other transcontinentals.

In 1890 the Santa Fe bought the Frisco for a route into Saint Louis. Westward, it took over the Colorado Midland and made connection with the Rio Grande's Salt Lake City Line, besides acquiring the paying tourist trade between Colorado Springs and Glenwood Springs. That year the Santa Fe began to boast that it was the greatest railroad in the world.

It had started in a frontier Kansas town, the dream and the project of pioneers, and it had fought drought, plague and panic along with the settlers it carried across the Rockies, the Sierras, the Sangre de Cristos, and the Glorietas. Again, in 1893, in common with the other railroads and the farmers of the nation, it would have to fight falling revenues, scalpers, commission men and widespread depression. Almost before the panic was over it would have to face receivership, reorganization, and the regrouping of its lines. But it would still, at the end of that time, and for some years to come, have the longest track in the world under one management.

Out in California, San Francisco, Fresno, Stockton and other towns wanted to break the Espee rule. In the northern half of the San Joaquin Valley farmers who had bought their lands on contracts that called for $2.25 and $2.50 an acre found themselves faced with a price hike to $30 an acre. Pay up or move, said the dominant Espee. Merchants at Sacramento, forced to pay 82 cents to bring 100 pounds of canned goods from San Francisco, tried to break the Espee monopoly; but every attempt to introduce competition failed. Eastbound rates were raised again and again; they finally shot up so high that hundreds of tons of food were rotting in the Valley.

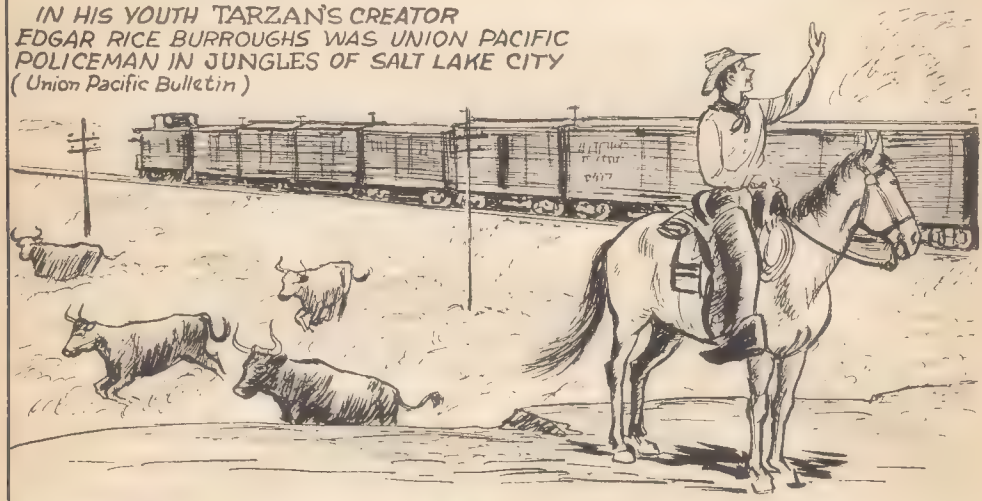
In 1895, San Francisco citizens quietly assisted by the Santa Fe, decided that it was time for the Valley to build a people's railroad. The Valley pledged over 2 million dollars to the project and in six months' time the new line was graded south from Stockton. Ahead, new towns sprang up overnight. Escalon, 22 miles south of Stockton, was designed as the headquarters of an irrigating project for the fruit growers of the region. By October of 1896 the road reached Fresno, and the first train over the line was christened the *Emancipator*. The Espee still didn't see Santa Fe's hand behind the deal or know that equipment and construction was being paid for by its old rival. A couple of years later the line opened to Bakersfield, where the Tehachapi Mountains blocked it from further construction. Hat in hand, the little Valley Railroad officials went to the big Espee, who graciously granted it permission to use Espee trackage from Kern Junction. At Stockton on the north end of the line, track was moving forward over the swamps to deep water at Richmond; and here, in 1900, the Santa Fe came out of hiding, and inaugurated the first Santa Fe service between San Francisco and Chicago.

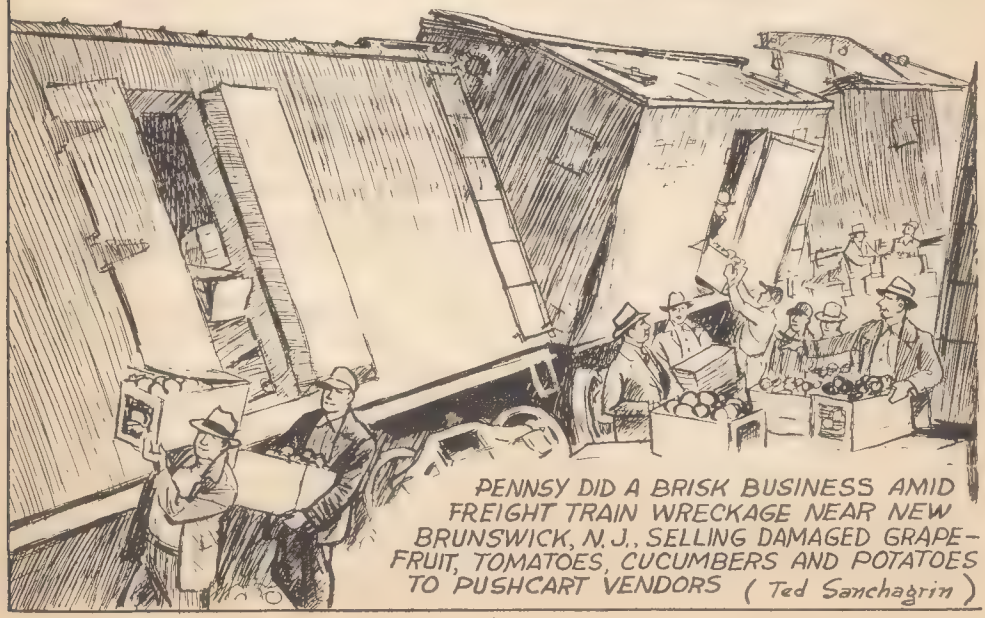
Colonel Holliday's railroad is still expanding, still bringing people and industries to sections where railroad transportation is vital. There are no more land sales, and no new towns to be built; but across the plains, north and south, east and west, where once there were only Indians and the buffalo, it hauls the grain, the mine ores and the livestock from the farms and mines it developed; and it brings back to the people the products that the rest of the world has to offer.

ALONG THE IRON PIKE

by JOE EASLEY

IN HIS YOUTH TARZAN'S CREATOR EDGAR RICE BURROUGHS WAS UNION PACIFIC POLICEMAN IN JUNGLES OF SALT LAKE CITY (Union Pacific Bulletin)





PENNSY DID A BRISK BUSINESS AMID FREIGHT TRAIN WRECKAGE NEAR NEW BRUNSWICK, N.J., SELLING DAMAGED GRAPEFRUIT, TOMATOES, CUCUMBERS AND POTATOES TO PUSHCART VENDORS (Ted Sanchagrin)

A TREE GROWS IN FLORIDA BUT IT'S AILING. SEABOARD HAS HIRED SURGEON TO CARE FOR 75-YEAR-OLD PATIENT— MULBERRY TREE AT STATION IN MULBERRY, FLA.
(Ward Allan Howe, NY Times)

REMEMBER WHEN YOU WANTED TO BE COWBOY OR ENGINEER? ARCH SNEED HAS BEEN BOTH COWPUNCHER ON OKLAHOMA PANHANDLE AND HOGGER FOR ROCK ISLAND IN TEXAS, HE'S RETIRED NOW
(Southwestern Ry. Journal)

AMIABLE PAIR OF GREAT DANES DELAYED TWO TRAINLOADS OF NEW YORK CENTRAL COMMUTERS BY WANDERING ONTO TRACKS NEAR 138TH STREET IN THE BRONX, AFTER CHASE, DOGS SUBMITTED HAPPILY TO TRAIN CREWS AND STATION AGENTS (Shirley Chidsey)

J. W. Enger, Wide World

As Northern Pacific ***Mikado*** 168" pulled into Oakes, N.D. in cold wave it blew smoke rings exactly as they appear here, untouched by any photographer's brush. Slight wind blew them forward so they weren't broken by smoke from stack. Lighter color of rings was caused by vapor and steam in puffs from engine

Light of the Lantern

LOCOMOTIVE POWER

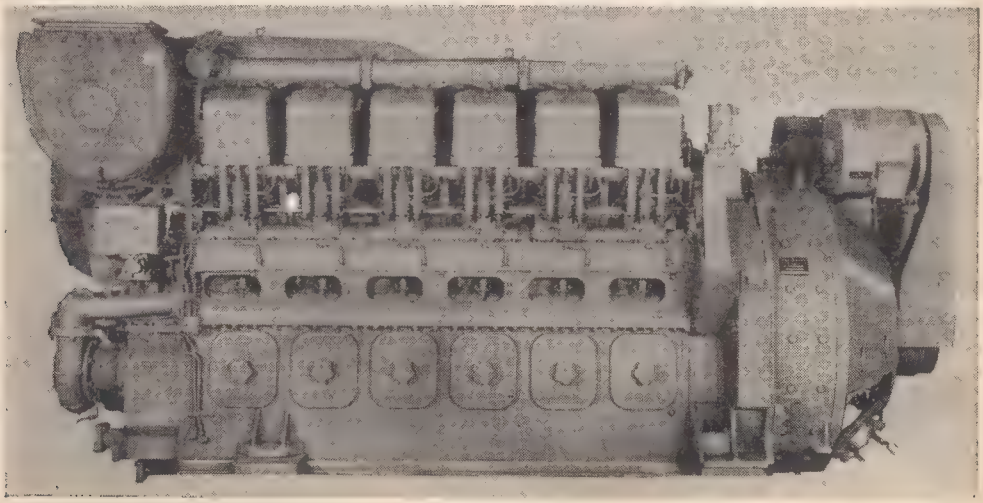
WILLIAM MIDDLETON

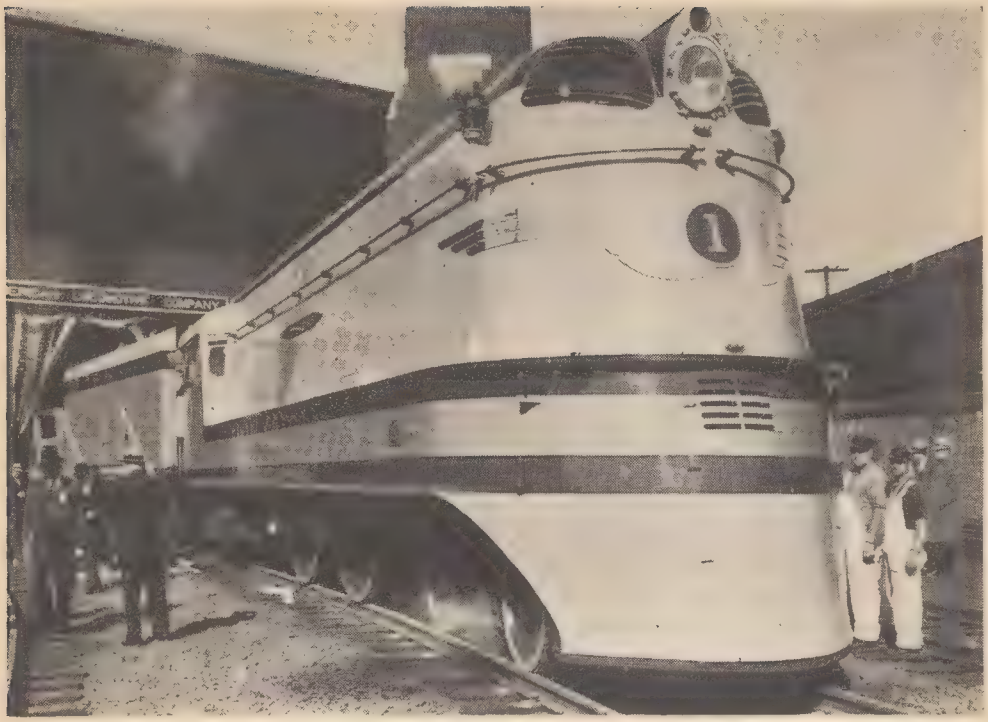
PERHAPS one of the most confusing subjects to many railroad fans is that of locomotive power. Diesel and electric locomotive capacities are usually given in terms of horsepower while steam locomotives are rated by tractive force or tractive effort. To add further to the confusion, specifications and descriptions often include an array of terms and figures such as adhesion, factor of adhesion, rated horsepower, drawbar horsepower, cutoff, heating surface and others, all of which have little significance or meaning for the average person. The purpose of this article is to show what some of these terms mean and how they can be used to determine a locomotive's capacity under different conditions, particularly speeds.

Tractive force is obviously the *force* a locomotive can exert in pulling a train, usually measured in pounds. Horsepower is the *rate* at which a locomotive can do work. Work is measured in units of foot-pounds—a force of one pound acting through a distance of one foot is a foot-pound. One horsepower is defined as 550 of these foot-pounds done per second, so a locomotive developing 1000 horsepower can do 550,000 foot-pounds of work each second. For example, it could exert a tractive force of 50,000 pounds at a speed of 11 feet per second; at twice that speed it could exert a tractive force of only half as much, or 25,000 pounds, but in either

Starting tractive force of Diesel-electrics is limited by traction motor's capacity and by adhesion force available

Alco-GE





Milwaukee Road

Famous *Hiawatha Atlantics* reach peak horsepower near 100 mph. on light passenger trains they were intended for, but can't stand gaff of extra coaches

case 550,000 foot-pounds of work are done per second. Actually a locomotive does not develop the same horsepower at different speeds; it increases from zero at starting (no work is being done) to a maximum, and then decreases at higher speeds. A steam locomotive reaches its maximum horsepower at a comparatively high speed; for example, the New York Central's 4-8-4 *Niagara* reaches a maximum cylinder horsepower of 6600 at 85 miles per hour. A high-wheeled passenger engine like the Milwaukee Road's famous Class A *Atlantic* reaches its peak horsepower at an even higher speed, nearly 100 mph. Most Diesel-electrics reach their maximum horsepower at much lower speeds, about 40 mph. for passenger and about 10 mph. for freight, giving them better performance in the low speed ranges while the steam locomotive has the advantage at high speeds.

There are three elements which may determine a steam locomotive's capacity to do work. They are: (1) The adhesion element, which is determined by the weight on drivers and the friction with the rails; (2) The capacity of the cylinders, and (3) The steam producing capacity of the boiler. All three elements must be proportioned by the designer so that there is no waste capacity in any of them. Large cylinders are of no value if the boiler is too small to keep them supplied with steam, or if there is insufficient weight on the drivers to prevent slipping. In the same way a large boiler is of little value if the cylinders are too small to use the steam economically.

A locomotive would be unable to pull if there were no friction between the drivers and the rails. The tractive force it can exert is limited by the weight on drivers and the coefficient of friction with the rails. The coefficient of friction, or the percent of adhesion, as it is sometimes called, is simply the ratio of the maximum force the locomotive can exert with-

out slipping. It will usually range from 1/3 for dry, sanded rails to 1/5 for slippery rails. For example, at a friction coefficient of 1/4, or as it is usually stated, 25 per cent adhesion, a locomotive with 100,000 pounds on the drivers can exert a tractive force of 25,000 pounds before slipping.

The *maximum* tractive force that a locomotive can exert is determined by the capacity of the cylinders. We can find this tractive force by dividing the distance traveled by the locomotive in one revolution of the drivers into the foot-pounds of work done by the cylinders during one revolution. This cylinder work is equal to the force exerted by the steam multiplied by the distance traveled by the pistons. The force exerted is equal to the steam pressure in pounds per square inch times the area of the piston in square inches. In an ordinary two-cylinder engine there are four strokes for each revolution of the drivers, so the total distance traveled by the pistons is four times the stroke. Anyone familiar with mathematics can develop this into the formula for cylinder tractive force:

$$\text{Tractive Force} = \frac{PC^2L}{D}$$

P is the effective steam pressure in pounds per square inch.
C is the cylinder diameter in inches.
L is the stroke in inches.
D is the driver diameter in inches.

For a four-cylinder single expansion or simple articulated locomotive this formula can be used by doubling the result since there are twice as many strokes for each revolution of the drivers. The formulas for compound-type locomotives are much more difficult to develop. For a four-cylinder compound-type locomotive the formula is:

$$\text{Tractive Force} = \frac{2Pc^2L}{(c^2/C^2+1)D}$$

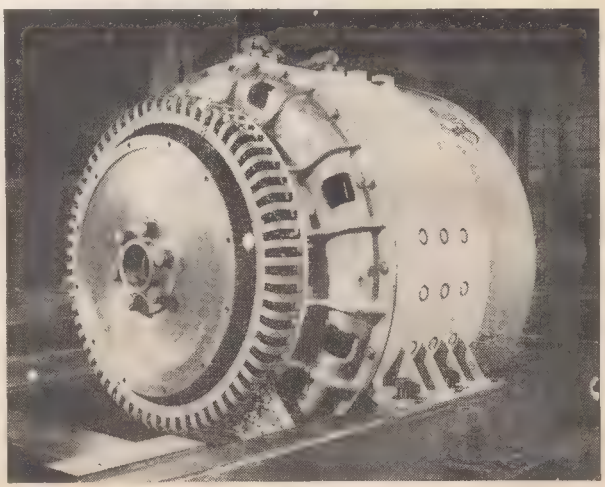
All the symbols are the same as the first formula, and the small *c* is the diameter of the *low* pressure cylinder in inches.

THESE formulas are used to compute the rated tractive force of steam locomotives, which is the tractive force usually given in locomotive specifications. The actual effective steam pressure in the cylinders will be somewhat less than boiler pressure because of friction and back pressure, so a steam pressure of 85 percent of the boiler pressure is generally used to find the rated tractive force. The factor of adhesion for a steam locomotive is the ratio of the weight on drivers to this rated tractive force. It usually ranges from about 4.0 to 4.5. A low factor of adhesion means that a locomotive has a high tractive force compared to its weight on the drivers.

The rated tractive force gives the force available for starting. As the speed increases the tractive force developed by the cylinders decreases. Since, at higher speeds the boiler cannot provide enough steam for a cylinderful at each stroke, the

Combination AC-DC generator for EMD all-purpose 6000 hp. F3 locomotive contributes to versatility of Diesel over steam. Postwar motor drives all accessories and auxiliaries on AC

Hedrich-Blessing Studio, Chicago



engineer shortens the cutoff, or the period during the stroke when steam is admitted to the cylinder and the remainder of the stroke is made using the expansive power of the steam. As the cutoff is shortened, the full steam pressure is not applied during the entire stroke, so the effective pressure will be reduced and with it the tractive force produced. The engineer controls the point of cutoff by changing the position of the valve gear. The proper amount of cutoff for any speed is determined by experience, or on many modern locomotives by the use of a valve pilot or back pressure gauge. When the valve pilot is used the engineer changes the cutoff until a pointer representing cutoff is at the same position as a speedometer pointer. When the two are matched the most efficient cutoff for that speed is being used. When a back pressure gage is used the engineer shortens the cutoff until the back pressure in the cylinder reaches the best value for economical operation, which is marked on the gage.

As the locomotive builds up speed, the tractive force is no longer limited by the adhesion or cylinder capacity, but by the steam-producing capacity of the boiler. The amount of steam produced depends on the heating surface of the boiler, but the amount of steam necessary to produce a given amount of work varies with the speed, so it would be impossible to develop a simple formula that will give accurate results for tractive force at all speeds. There are many formulas available for different conditions, but one we can use at speeds above 30 mph. for a locomotive equipped with stoker and superheater is:

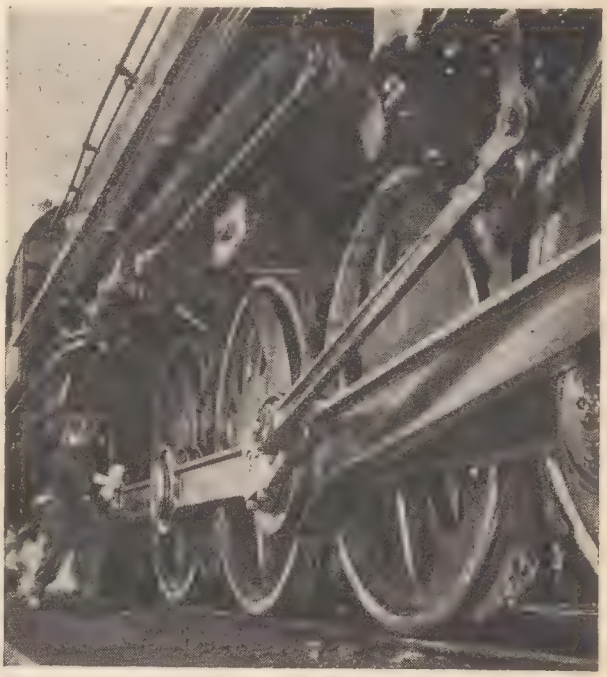
$$\text{Tractive Force} = \frac{340\,H}{S}$$

H is the water heating surface in square feet.

S is the speed in miles per hour.

Results will be only approximate but they will give us a good idea of a locomotive's capabilities at different speeds.

The cylinder horsepower of a steam locomotive is based on the work being done in the cylinders, and is considerably greater than that actually available for train pulling, called drawbar horsepower. Drawbar horsepower is less than cylinder horsepower because of the power used in moving the locomotive. We have already said that one horsepower is 550 foot-pounds of work done per second; so if we wish to find the drawbar horsepower being developed by a locomotive at speed, we can divide the work done per second by 550. The work done per second will be the tractive force in pounds times the speed in feet per second. If we make another formula out of this, we get:



New York Central

***Niagara* frames were designed so NYC could use 75- to 79-inch drivers. Diesels simply change gear ratios**

$$\text{Horsepower} = \frac{\text{TF} \times \text{S}}{375}$$

TF, of course, is tractive force.

For an example, let's take the New York Central's S1 *Niagara* at a speed of 80 mph. The S1 has a water heating surface of 4819 square feet, so our approximate formula for boiler tractive force gives us 20,485 pounds at 80 mph., from which we get a horsepower of 4380. From dynamometer tests the actual horsepower of a *Niagara* at 80 mph. is 4700 and the tractive force is 21,500 pounds, so we can see that this approximate method can give fairly good results. Although we used a steam locomotive as an example, this method of determining horsepower can be used for *any* type of locomotive as long as the speed and tractive force are known.

NOW THAT we have seen just what the three basic elements of steam locomotive power are, we should be able to apply them to the performance of a locomotive. At starting, the tractive force is limited by the capacity of the cylinders or by the adhesion of the driving wheels. A locomotive can never develop a greater tractive force than that produced by the cylinders, no matter how much adhesion is available. As the speed increases, the tractive force is limited by the ability of the boiler to produce steam.

For Diesel-electric and electric locomotives the problem is not quite so complicated. An inherent feature of the electric traction motor is the tremendous force it can exert at starting and low speeds. The starting tractive force of a Diesel-electric or electric locomotive is never limited by the capacity of the traction motors but only by the adhesion force available, which depends on the weight on the drivers just as it did for steam locomotives. When the starting tractive force of a Diesel or electric is given, it is usually based on 25 or 30 percent adhesion.

The rated horsepower of a Diesel-electric is the horsepower developed by the Diesel engines. Because of various losses in the electric transmission and in moving the locomotive, the actual drawbar horsepower is considerably less. A Diesel locomotive rated at 2000 horsepower will actually develop a maximum drawbar horsepower of about 1600. At speeds above 10 mph. for freight locomotives and above 25 mph. for passenger locomotives the Diesel-electric develops a fairly constant drawbar horsepower of about 75 percent of the rated horsepower. If we want an idea of a Diesel's tractive force above these speeds we can reverse the formula we used before for horsepower, so that:

$$\text{Tractive Force} = \frac{375 \times \text{DHP}}{\text{S}}$$

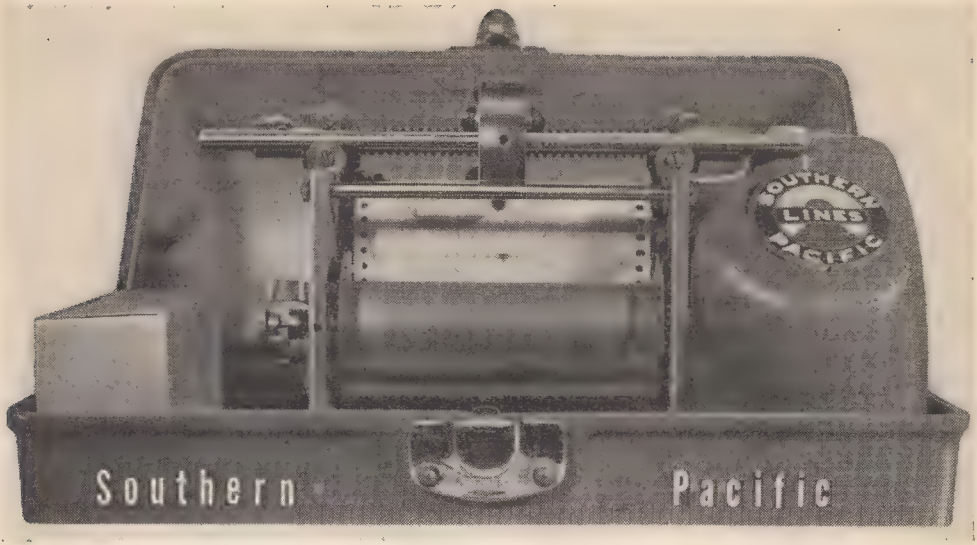
DHP means drawbar horsepower.

TRACTIVE force and speed characteristics of a steam locomotive are inherent features of the design and cannot be easily changed. A freight locomotive will have small drivers with as much weight as possible concentrated on them, while a passenger locomotive will have larger drivers and must distribute more of the weight on the leading and trailing trucks to give the better riding characteristics needed for high speeds. The many general service type locomotives are a compromise in these requirements making them suitable for either fast freight or heavy passenger service. A steam locomotive could be almost as versatile as General Motors' all purpose F3 if it were possible to change the size of the drivers as easily as the gear ratio can be changed in the Diesel. In fact the frame of the New York Central's *Niagara* is designed so drivers of 75 to 79 inches in diameter can be used depending on the future requirements of freight or passenger service.

Certainly the best means of getting accurate performance data is by tests of the actual locomotive with a dynamometer car but unfortunately the results of such tests are not readily available to most railroad fans. However, these formulas and methods will provide a good means of estimating the performance of various locomotives.

Brotherhood of Locomotive Firemen & Enginemen's Magazine

If you owned all these wheels you could retire after the sale. Platform scene at manufacturers represents several thousand 650- and 850-lb. castiron wheels, whose treads were chilled at 2400 degrees F



Southern Pacific Bulletin

Espee's 152 freight impact recorders tell encouraging story of less damaged merchandise, fewer claims

INFORMATION BOOTH

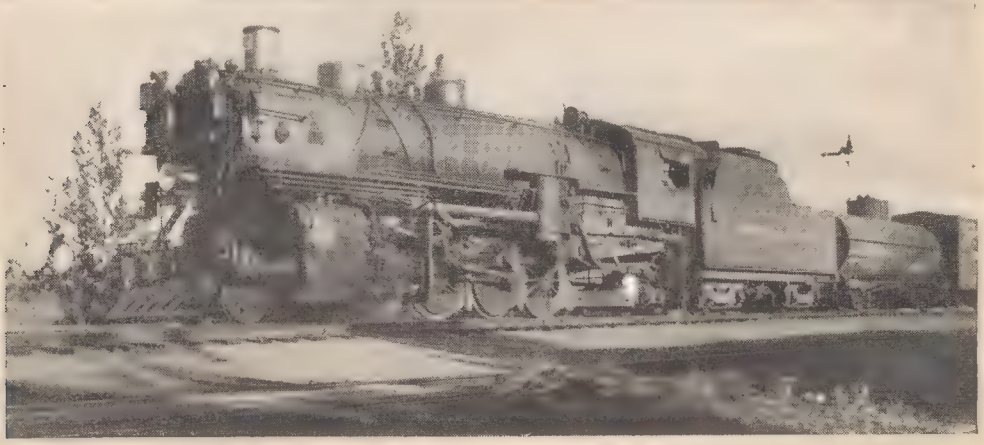
Each month the Lantern Department prints answers to rail questions of general interest, submitted by our readers. We do not send replies by mail.

Q *What is this impact register device in use on the Southern Pacific? Has it cut damage claims?*

A The impact register has been helping to smooth the ride for freight and passengers on the Southern Pacific. A sensitive needle registers on a graph the jar on cars in starting, stopping and switching. Freight Protection, Merchandise & Station Service has 152 freight and 6 passenger impact recorders in service. These devices are telling an encouraging story of reduction in freight impacts in excess of 4 miles per hour in yards and on the road.

Northern Pacific's Class W-5 *Mikados* performed on Yellowstone Division until big Class Z-5 articulateds came along

L. Ferguson



Fewer overspeed impacts mean fewer freight claims. Hjalmar J. Alexson, engine foreman at the Roseville Yard for the past 15 years, reports that before a train is broken up in the yard, the switch list is thoroughly studied and all cars containing explosives and other commodities susceptible to damage are pointed out to each member of the crew to insure careful handling. The necessity for not exceeding the maximum coupling speed of four miles an hour is emphasized. Alexson also stressed the importance of strict compliance with Transportation Department rules, which provide that clear hand signals must be given and if a yardman's hand or lamp signal cannot be seen, switching should be stopped until the yardman is in a position where his signals are visible. He praised the railroad for progress made in improving its program of "blocking" cars in outbound trains. This not only results in greater efficiency by reducing switching operations and expediting movements, but should also reduce damage claims. Alexson says the yardmen, as a group, "are conscientious and they try to prevent damage to freight."

Q *My uncle, a freight engineer on the Butte Division of the Great Northern, claims that his run, the Fifth Subdivision between Great Falls and Laurel, Montana, 226 miles, is the longest freight run in the United States made by one crew. Is this correct?*

A To the best of our knowledge, he is right. At one time the Western Region of the Pennsylvania Railroad ran freights through from Hawthorne Yard in Indianapolis, to Rose Lake Yard in East St. Louis, Illinois, a distance of nearly 240 miles without change of train crews, but this is no longer done. All regular freight crews, both engine and train, change now at Terre Haute, 72 miles west of Indianapolis. Some passenger conductors and trainmen, however, run through from Indianapolis to St. Louis. The Pennsy informs us that the longest run made by any of its freight crews in the railroad's electrified territory is the 224.2 mile stretch from Harsimus Cove Yard in Jersey City to Potomac Yard in Alexandria, Virginia.

Q *What happened to London, Midland & Scottish experimental turbine locomotive Number 46202? I remember it was built in 1935 with a Lysholm-Smith Ljungstrom turbine.*

A A serious failure affecting the transmission took place last year, and because of the cost which would be incurred in repairing this damage and effecting other replacements, it was felt by the British Railways that it would be best to convert this locomotive to an orthodox 4-6-2 design. It had run nearly 440,000 miles since construction, and much knowledge on the capabilities of turbine propulsion was obtained over the 15 years the locomotive was in operation.

Q *How much has the number of railway operating companies in the United States declined during the past 40 years?*

A Official figures of the Interstate Commerce Commission show that there were 1312 operating railroads in 1911, and only 690 at the beginning of 1950.

Q *Do you have any specifications of the Northern Pacific's W-5 Class 2-8-2s?*

A Yes, we do. Principal specifications are: Numbers, 1835-1859 inclusive; pressure, 200 lbs.; cylinders, 28x30 inches; weight, 545,100 lbs.; drivers, 63 inches; tractive force, 63,460 lbs.

Number 1844 of this class was the *Mikado* which in 1925 set a world record for long-distance freight runs by hauling a full tonnage freight from the Pacific Coast to the Twin Cities, 1892 miles, without uncoupling from its train. Locomotives of this class, built by Alco in 1923, were originally assigned to the Yellowstone Division, where the ruling grade is about 1 percent in both directions, until the big Z-5, 2-8-8-4 articulateds replaced them. Before World War II, the 1844

was used out of Muir, Montana, in helper service over Bozeman Pass. At the present time it is assigned to the Lake Superior Division.

Q *What about the Pennsylvania's track construction project to serve the new Fairless Works of the United States Steel Company? It's being built along the Pennsylvania side of the Delaware River, a few miles below Trenton, New Jersey.*

A Work is progressing rapidly on the project in Falls Township, Bucks County, near Morrisville, which will link the railroad's Morrisville Freight Yard with the Fairless Works. Plans call for a double track siding 9000 feet long, to be laid on an earth embankment at an easy descending gradient into the steel plant and crossing the Pennsy's five mainline tracks and the Bristol Turnpike (U. S. Highway 13) over a series of seven reinforced concrete spans and a steel girder bridge. The project will cost an estimated $1,250,000 and is expected to be completed by the end of this year. The new spur will leave the eastern end of the Morrisville Yard at a high level and will descend to the plant site on an average grade of 7 inches to each 100 feet. More than 500,000 cubic yards of embankment needed for the project is being obtained from a location a mile to the west, on railroad-owned property lying between the Morrisville Yard and the Lincoln Highway.

A large reinforced concrete pipe will be laid in the bed of the abandoned canal formerly owned by the Lehigh Coal & Navigation Company but now the property of the Commonwealth of Pennsylvania, to provide for continued flowage of canal waters. Fill will be carried close to the two westbound mainline passenger and freight tracks; in the area between them and the two eastbound through tracks, and in the additional single industrial track which parallels them at this point. Fill will also be used east of the Bristol Turnpike.

The westbound tracks will be crossed by a 44-foot reinforced concrete span, while the eastbound tracks will be crossed via a 66-foot steel girder bridge. Adequate space is being provided to allow for eventual widening of the Bristol Turnpike. The first batch of 4400 cubic yards of concrete required was poured late in June and steel deliveries started early in October.

From the Bristol Turnpike the spur will run east to a point near the former Sky Haven airport on Pennsylvania Avenue, then curve slightly south to enter steel plant grounds at Tyburn Road. Right-of-way for this line was recently acquired from the Warner Company, whose extensive sand and gravel operations occupy much of the adjacent land.

When the permanent sidings are completed, a temporary track crossing the Bristol Turnpike will be removed.

Q *What was the first railroad in Alabama?*

A Alabama was a leader in pioneer railroad building ventures. When steamboat transportation over Muscle Shoals failed to justify early hopes, Tennessee Valley planters organized the Tuscumbia Railway connecting Tuscumbia and the Tennessee River. This first railway west of the Appalachians and south of the Ohio River, chartered in 1830, was only 2.2 miles long, but 5 years later it had been built 44 miles around the Shoals to Decatur. Rails were of strap iron laid on wooden stringers. Financed with planters' money, the road (renamed the Tuscumbia, Courtland, & Decatur Railway) eliminated the hazards of Muscle Shoals in transporting cotton to New Orleans. On December 15, 1834, the first run was made between Tuscumbia and Decatur by a woodburning locomotive towing a few cars. Later, mule-teams were sometimes the motive power, with relay stations every few miles. In 1847, after several years of uncertain operation, the road was reorganized as the Tennessee Valley Railroad. After the Civil War it became part of the Memphis & Charleston Railroad, which later became a unit of the present Southern Railway System.

So Big

Never before did the New York Central handle such a large shipment—its own 107-ton girder for the Bronx River Parkway Extension crossing the Woodlawn tracks. Almost 154 feet long and nearly 12 feet high, the beam, on five flatcars, couldn't clear several auto bridges on the Harlem Division, so it had to be sent on an 84-mile round trip up the Put to double back on the Harlem. *Left*, at Kitchawan on the Put. *Below*, at the West Side Yards, 72nd Street

New York Central

Q *How many Diesel locomotives does the St. Louis-San Francisco have?*

A Delivery of 37 Diesel locomotives will completely Dieselize the Frisco, with a total of 406. When Dieselization is complete the Frisco will have 23 passenger locomotives of 2250 horsepower each; 12 combination freight-passenger units of 1500 horsepower; 123 freight of 1500 horsepower; 133 general purpose of 1500 horsepower; 75 yard switchers of 1000 horsepower; 19 yard switchers of 1200 horsepower; 2 yard switchers of 660 horsepower; eight 44-ton yard switchers, and 12 locomotives operated by the Alabama, Tennessee & Northern Railway, a Frisco subsidiary, including eleven 1000 horsepower and one 44-ton switcher.

Q *Can you give me some information on the transporting of the 107-ton steel girder for the bridge that will carry the Bronx River Parkway Extension over the four tracks of the New York Central's Harlem Division at Woodlawn?*

A The largest single shipment ever to be handled by the New York Central in New York City—a girder 153 feet 7 inches long and 11 feet 5 inches high, arrived in the railroad's West 72nd Street yards, on Thursday, August 2nd. The beam, balanced on 5 flatcars, was carried by the Lehigh Valley Railroad from the Harris Structural Steel Company in New Market, New Jersey, on a Wednesday afternoon. The next morning, it was floated from Jersey City across the Hudson to the Central's West Side freight yards and sent up the Hudson Division to the Marble Hill junction with the Putnam Division. On Friday, August 3rd, the shipment was transported over the Putnam Division almost to Brewster, and then south from Putnam Junction over the Harlem Division in Woodlawn. (Recently the Pennsy handled a 127-ton girder for the Jersey Turnpike.)

The girder was raised at midnight, August 20th, to stretch between two piers of the Bronx River Parkway Extension where it crosses the tracks 1000 feet north

THE AMERICAN DISTILLING CO., INC., NEW YORK, PEKIN, ILL., SAN FRANCISCO • 86 PROOF, 65% GRAIN NEUTRAL SPIRITS

Wheel Checkers

California's Ventura County Railway, only 11 miles long, makes railroad history, electrically checking wheels for broken flanges and looseness on moving trains. If as little as 3½ inches of flange be broken within ⅝" of tread or wheel be out of gage when passing through contact, relay rings bell and turns on signal light. Tips of chromium-plated spring-steel fingers extend ¾" above rail and touch tread of wheel unless depressed out of contact range by normal flange

of Woodlawn station. On succeeding nights, two flanking girders—one 92 tons and 167 feet long, the other 65 tons and 143 feet—were hoisted to the overpass foundation. The reason the girders are so long is that there is no room for the highway contractor—the Horn Construction Company of 1776 Broadway—to build a pier between the 4 straight tracks to support shorter girders. An intermediate pier would require relocation of the tracks, and the consequent curves would cut the 50-mile-an-hour speed of trains passing through. The curves could not regain the straight tracks over the Bronx River bridge, 200 feet south of the overpass, so the bridge would have to be widened. The railroad opposed this idea.

The job of transporting the girder began at 4:30 p. m. on August 1st. The huge beam had been delicately balanced at two points on greased slidings on the second and fourth cars. The other three were idlers, carrying no weight. A kingpin, extending through the forward cradle and the flatcar deck prevented the beam from sliding off that end. The rear kingpin traveled in a deck slot a foot long to allow for slack in the couplings. At 7:50 a. m. on August 2nd, the cars were rolled on a float at the Lehigh Valley's floating bridge at Jersey City, opposite Rector Street in Manhattan. The Lehigh tug *Athens* backed the float from shore and, respecting the nearby passage of the French liner *Liberte,* waited a moment before swinging about. A north breeze caught the beam and pulled the tug and float downstream. Captain Erling Jorgensen, spinning the wheel, remarked, "She's like a big sail." Forty minutes later he nosed the float into the Central's 68th Street floating bridge. The timing was perfect—an hour to high water, when the path over the bridge is flattest—but even so the beam took a majestic shimmy as the cars were hauled off. The bridge rails were shored with timber so they wouldn't spread. But the beam's great weight found a weaker spot. Although the flatcars were rated at 102-ton capacity each, a journal on the brake-end of the second car cracked, and took two hours to replace. A bell jangling in the float bridge shanty started another delay. It meant that a telltale, or warning device on the bridge, had picked up a projection on the flatcars that wouldn't clear the third rail. As a result, two airbrake-release valve rods had to be removed. At last a switch engine began the slow haul to Marble Hill Junction. That junction is only 10 miles from Woodlawn via Mott Haven and a northern route on the Harlem Division tracks. But the beam couldn't clear several vehicular bridges along the way, so it had to go instead to Putnam Junction, near Brewster, and double back south on the Harlem Division line—only eighty-four miles!

Q *The Ventura County Railway, a standard-gage shortline in California, is now equipped with wheel checkers. Do you have any details?*

A The installation was completed on June 16, 1951 and marks the first time in railroad history that standard-gage car wheels on moving trains have been electrically checked for broken flanges and loose wheels. Frank J. Rebhan, traffic manager, always interested in preventing damage to shipments, arranged for the installation. This outfit is in the nature of a cooperative venture, the railroad furnishing the labor and considerable material while W. A. Gieskieng and his radio-engineer son, wheel checker inventors, supplied the detecting finger assemblies and a relay. Monthly reports are being made and the equipment kept under close observation to determine its dependability and performance characteristics. The installation on the 11-mile-long Ventura County Railway, which connects with the Southern Pacific at Oxnard, California, and the little outfit on the City Park Railway at Denver, Colorado,* are both working daily, rendering perfect service. Gieskieng retired from engine service on the Rio Grande this summer, after 49 years. He tried to make it 50 years with the railroad, but just missed.

** Railroad, June '50*

A Mantelpiece Model: *Part 1*

LOCOMOTIVE ATLANTIC with IMLAY COACHES

HENRY B. COMSTOCK

WANT a mantelpiece model that will attract more attention than a *Mallet* or a four-unit Diesel, and take perhaps a third as long to build? Then here she is—a quarter-inch scale reproduction of the Baltimore & Ohio's first practical grade-climbing locomotive, with double-decked coaches to match. As colorful as a Christmas card, her prototype train of 1832 personified the period of transition from primitive stationary engines and horse-drawn stages to horizontal boilers and swiveling trucks.

In this installment we will consider the locomotive only. Named the *Atlantic,* she was the first of a number of "Grasshoppers" designed by Phineas Davis, a York, Pennsylvania watchmaker, who became interested in engine design when the B&O offered a $4000 prize, in 1831, for a locomotive which would draw fifteen tons' gross weight, at fifteen miles per hour. Davis' first engine, the *York,* was no world-beater, but with certain changes suggested by assistant master of machinery Ross Winans, she was made to perform satisfactorily, attaining a speed of better than 20 miles an hour with a train of five cars, carrying 150 passengers.

Out of experience gained in building the *York,* Davis and Winans worked out the *Atlantic* design, which proved so satisfactory that about twenty of these engines were constructed. For some years they were the railroad's standard motive power. Their ability to haul heavy loads up steep grades caused the B&O to abandon its original plan to intersperse relatively level sections of track with inclined planes. On a single ton of coal the little *Atlantic* could run eighty miles with her full complement of cars, making her the most efficient fuel consumer.

A look at the drawings shows the reason for the "Grasshopper" designation. Two 10x20-inch cylinders exert their thrust on a pair of walking beams hinged from the boiler top, and from the outer ends of each of these beams the main rods work up and down on a crankshaft hav-

ing a large wheel at its center. This, in turn, meshes with a second gear wheel on the driving axle, the ratio being 2 to 1.

The valve motion is of the link and eccentric type. The sideview detail drawing indicates the general arrangement. Each of the rectangular links sits astride a three-disc eccentric. The central, or neutral disc is concentric with the axle and somewhat smaller than the eccentric wheels on either side of it, so that it forms a flush surface with the shortest throw of each of them.

To put the engine in either forward or backward motion, each of the engine's two links had to be moved in line with the eccentric desired by means of the upright lever controlling it and then shoved sideways by tramping down on one of the two circular foot treadles.

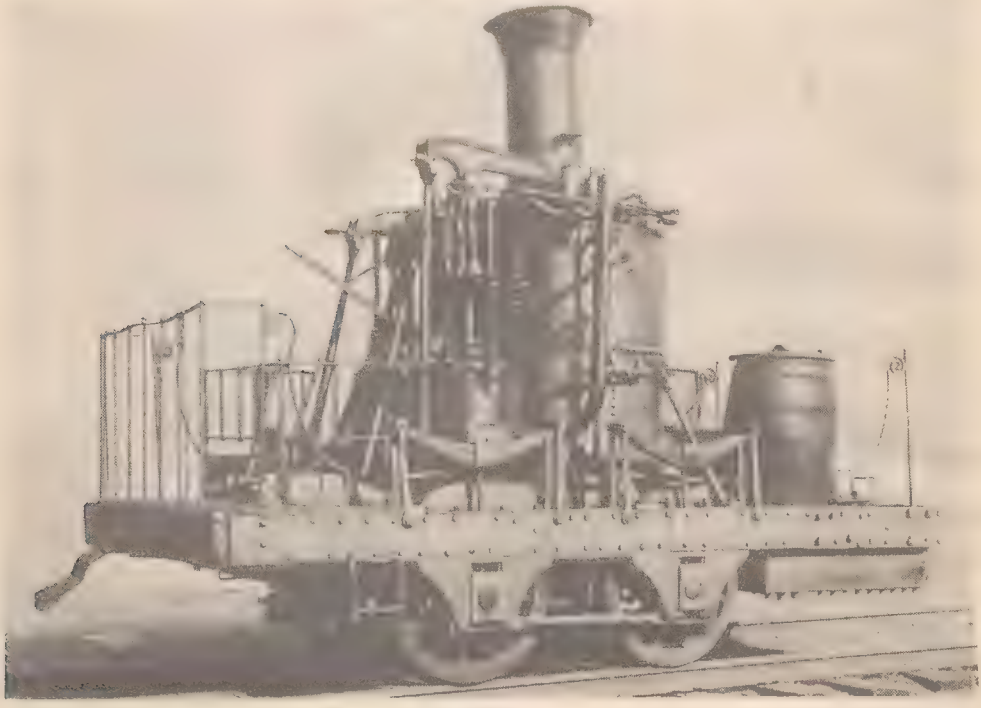
Looking down on the *Atlantic*, one cannot but be impressed by the striking picture of a modern engine which the arrangement of boiler, cylinders and crankshaft presents. Even the locomotive bell is in approximately the right position.

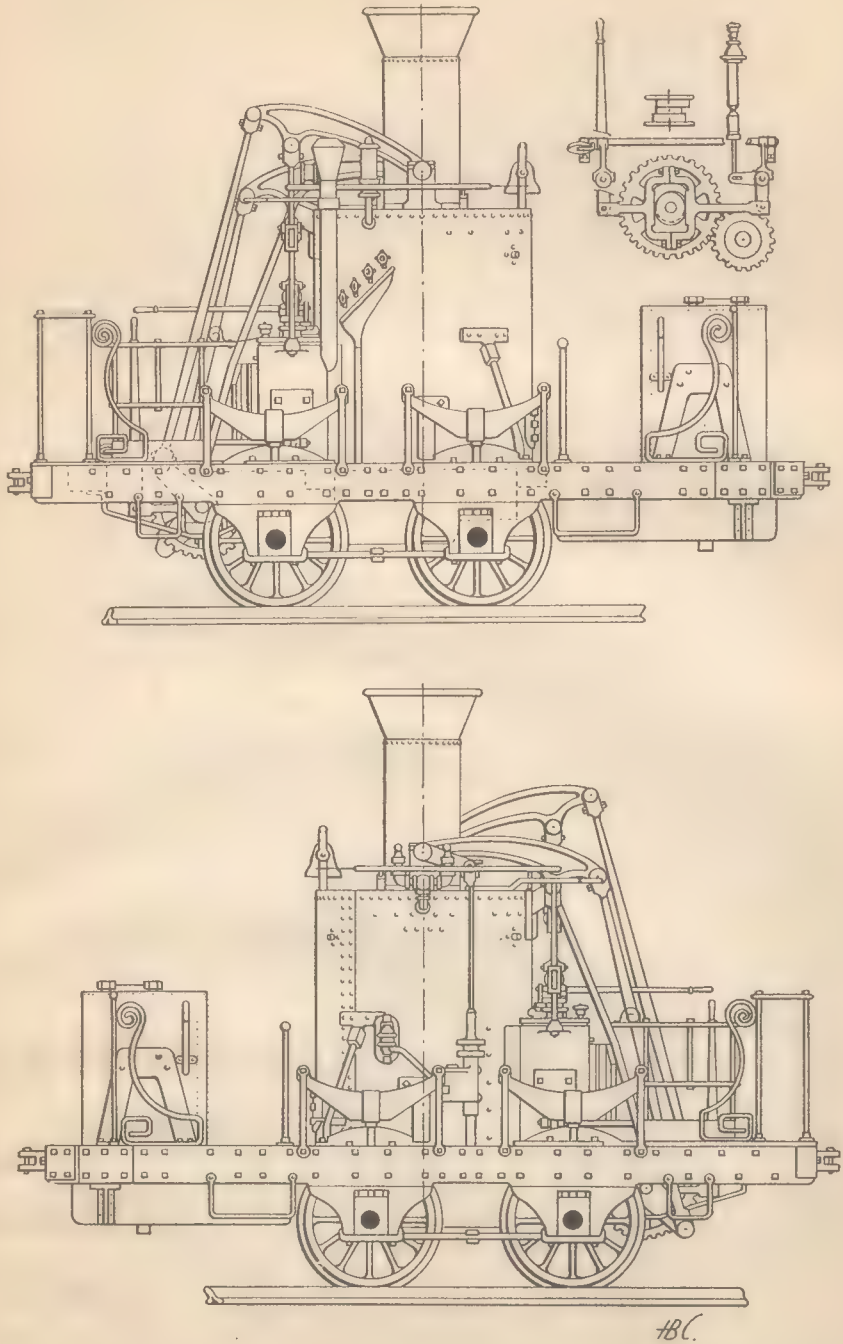
This bell, incidentally, is a more or less modern note, applied to the grasshoppers many years after the locomotives were completed. So is the sheetmetal water tank. Originally two water barrels were provided and one of the end-elevation drawings shows their position. Most of these engines had small, four-wheeled tenders, which the modeler will probably prefer to omit.

In color the *Atlantic* is an austere black, accented with silvered main rods, double piston rods, and valve and throttle levers. The tapered section of the exhaust stack, water-gage drip pan, and control handles are American red. The whistle and bell are polished bronze.

Next month we will conclude this feature with plans of the Imlay coaches.

While very similar to the *Atlantic*, which it impersonates, B&O exhibit engine is actually the *Andrew Jackson*, built in 1836. This is how she looked after rebuilding in 1892, to resemble her more famous predecessor. Iron water tank was added later

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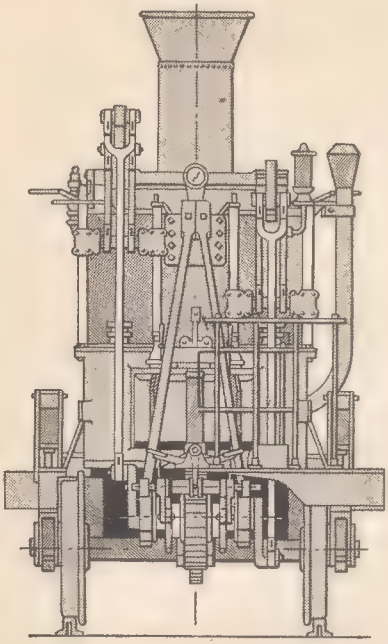
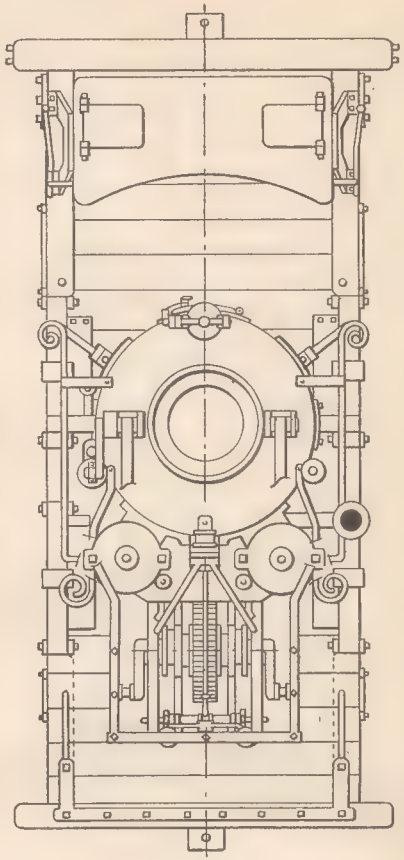
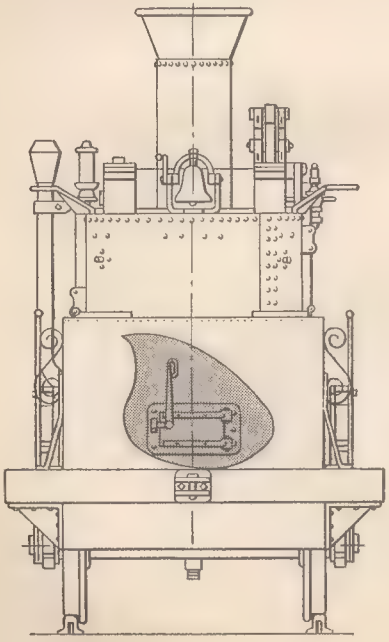
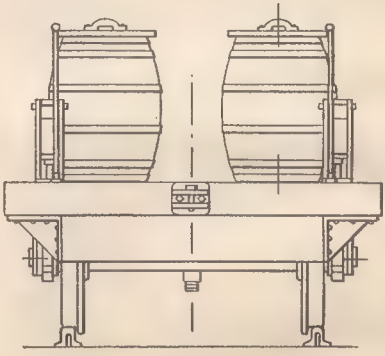








Journey's End for Packages

Story and Photos by STEVE CANTON

THE AUCTIONEER rapped his gavel impatiently. "Come on folks," he urged. "What am I bid for these five cans . . . contents unknown. Somebody can find a use for them . . . See . . . they look like steel filings . . . Maybe your missus can use them as permanent scouring powder in her dish-washer . . . All right, what am I bid?"

"Hey Charley," a buyer called, "I'll give you five dollars just so we can go on with the sale."

C. H. Ryan, sales agent for the Railway Express Agency's Sales Bureau in Jersey City, thought a moment, then nodded to his assistants. "No sale, take 'em away and bring on the next item."

Three weeks later, while preparing for another auction sale, Ryan received a frantic telegram from a chemical concern in New Orleans. A shipment of platinum powder valued at $35,000 had gone astray. Could he shed any light on it?

The five unwanted cans of "steel filings" actually were the missing cans of platinum powder!

Unfortunately, not all of the lost express shipments which are channeled to the Agency's Sales and No Mark Bureau in Jersey City's Erie Terminal or the three other bureaus in Chicago, Atlanta and San Francisco, share the same happy fate, because the Agency, after diligent searching for their proper owner and the expiration of the legal holding period, sells them at auction.

About 45 percent of the items sold at auction are damaged express shipments resulting from improper packing and other causes.

Another 35 percent are shipments placed "on hand," that is, packages left on the Agency's hands for storage and unclaimed after the legal period of time. The remaining 20 percent originate from the company's "No Mark" Bureau, the lost and found division of the Sales Bureau.

The No Mark Bureau would be a perfect proving ground for testing the ingenuity of veteran detectives, for it often happens that the most irrelevant clew will lead to the identity of the owner and the prompt return of the shipment. Actually about 75 percent of all shipments forwarded to the No Mark Bureau are identified and returned to their proper owners.

For example, a simple monogrammed "C" on the outside of a black suitcase led to the tracing of its prominent owner a few years ago. In the suitcase were found several Chinese ceremonial robes and two vases which Ryan immediately recognized as of Ming Dynasty origin. He promptly called the company's chief special agent, who contacted the FBI in Washington. Ryan's hunch was right, the FBI was most eager to lay its hands on it. The suitcase, which contained gifts for the former First Lady, Mrs. F. D. Roosevelt, belonged to Madame Chiang Kai-shek!

Letters, bills, sales receipts, photographs, clothing tags, etc., are some of the more common clues for tracing owners of lost express shipments, but sometimes the odd or unusual size of the garment may provide the key. Once a pair of size-8 nylon stockings provided the tracing point for a steamer trunk.

A SEARCHER, whose job is to open all shipments arriving at the No Mark Bureau with no outside identification, was

Right: **Goods to be sold are chuted down as Auctioneer Ryan calls out, "Next item." *Right, below:* Buyer Leon Marcus, regular attendant at auction sales, holds up paddle No. 25. Marcus habitually leads off with 10-cent bid, stays right in bidding when he wants something bad enough. *Right, bottom:* Nat Unterman writes down number of item he's won**

carefully itemizing the contents of this particular steamer trunk on the tally sheet when he came across the nylons in a paper bag imprinted with the dealer's name. A routine inquiry at the store turned up the name of the trunk-owner. Ryan's assistants know that dealers seldom carry heavy stocks of under or oversized hosiery, and for that reason usually keep a record of their customer's names and addresses, together with dates of purchase, for stock-ordering purposes.

The tally sheet, filled out by searchers, is given one of 42 general classification numbers according to the contents of the package. Claim reports, filed by customers who have lost their shipments are handled in like manner, receiving a classification number, which, when matching a searcher's tally sheet, is further checked to establish a relationship between the tally sheet and the claim report. When this happens, the claimant is called and requested to personally indentify his shipment, if possible. He must offer positive proof of ownership by producing the express receipt together with a detailed description of the contents of the shipment.

A case in point is that of a woman who had been sum-

moned to the No Mark Bureau to identify her lost suitcase. She was faring rather badly, for she had misplaced the receipt and could not recall the contents until Ryan asked her if the suitcase contained valuables such as money, jewelry, etc. She shook her head hopelessly, saying she never put such valuables in her luggage.

"I once had a silver dollar for a lucky charm," she added, "but I lost it some time before I went on my summer vacation, which was when I shipped my suitcase."

Ryan questioned her as to the coin and if she remembered its date. She did and also recalled it bore a deep nick on the edge. As a result, Ryan was able to establish identification, the silver dollar having been found in a pocket of a sweater in the suitcase.

"If shippers would only cultivate the habit of placing a duplicate address label inside of every package, every single shipment arriving at the No Mark Bureau without outside identification would be returned to its rightful owners promptly and unerringly," Mr. Ryan said.

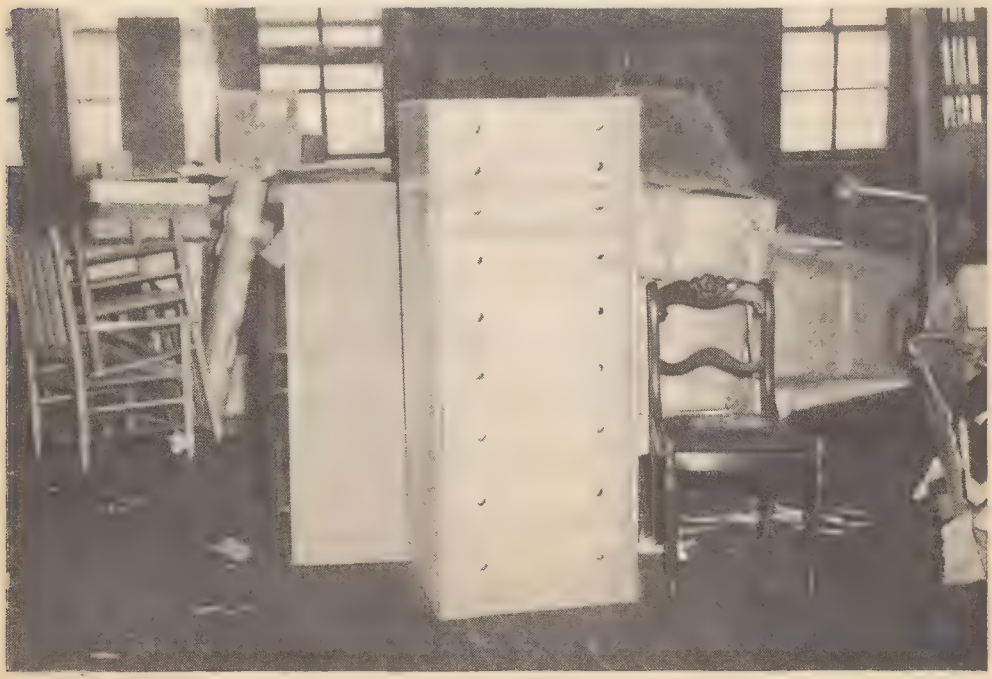
"We always urge our customers to place at least two address labels on the outside of every shipment and the inside address label as well. We even have labels especially designed for this purpose, free for the asking at any express office," he added, "and luggage manufacturers are now adopting our suggestion that permanent holders be constructed on the inside of luggage for the identification label."

"However, despite our efforts, about 25 percent of no-mark shipments remain unidentified, and these, together with claim and abandoned on-hand shipments are sold at auction when the legal period of holding has expired," Mr. Ryan concluded.

AUCTION sales are held whenever there is a sizable accumulation of goods to be sold . . . usually about a month apart, at the express offices in the four cities mentioned earlier in this article. The public is informed of these sales by newspaper advertisements and by notices posted at the sales bureau.

A two-hour inspection period is held on

Below: **Furniture, bedding, chairs, paintings are among numerous unclaimed items on sale. Buyers eagerly snap them up, matching a broken leg or arm of a chair for quick resale**



Above: **The end of badly packed or unidentified shipments. From here they go down the chute to be sold item by item. Express Company maintains extensive loss and damage program to avoid as much of this as possible**

the morning of the sale and the articles shown would rival the variety found at any leading department store. Typical of this treasure trove are:

Airplane propellers, blackboards, bric-a-brac, bookcases, books, beds, cabinets, chairs, carriages, cribs, etchings, filing cabinets, fluorescent lights and tubes, food closets, guitars, gossip benches, gas heaters, kitchen tables, linoleum, lithographs, lawn swings, lamps, mannequins, mirrors, oil paintings, picture frames, projectors, radios, silk printing screens, suitcases, trunks, silverware, stoves, scales, storage batteries, television sets and cabinets, typewriters, tires, wearing apparel, x-ray tubes and hundreds of other items.

Luggage often contains strange and bizarre articles of value to their original owners. One trunk was filled with books and personal notes of a chiropractor who had also enclosed a human spine neatly wired together and garishly shellacked. All letters, documents and other items of a personal nature are removed before the sale of any shipment.

A typical shipment forwarded to the No Mark Bureau consisted of a large carton with no outside markings whatever. Inside were many gaily-wrapped Christmas gifts for an entire family, each parcel tagged with such endearments as: "To Aunt Betty, with love from Bobby" and "To the best Pop in the world, from Jimmy," etc. It took lots of time and patience to wrap each of these gifts, and with what loving care they were personally addressed . . . . . only to wind up as a numbered item at an auction sale because the care of wrapping did not extend to the outside of the package with proper and legible addressing.

Buyers attending the auctions held by Railway Express Agency are, in the majority, dealers in all lines of business. Most are sharp, shrewd buyers who know their particular field and can tell at a glance the retail sales value of an item,

whether it be a second-hand set of climbing spikes for telephone linesmen, or a damaged Duncan Phyfe chair. While the bidding proceeds rapidly, the buyer mentally caluculates not only his probable retail return, but how much it will cost him to repair the article before he effects the sale. This requires years of experience in attending and evaluating auction sales.

NUMEROUS ruses are used by buyers to prevent their competitors from knowing they are actually bidding for an item, and it is up to Ryan to remember all of their favorite signals, which are prearranged before the sale and often changed at succeeding sales.

For example, a furniture buyer interested in an item on the block will make a bid, then suddenly walk away in apparent disappointment when outbidded. Ryan knows that the furniture man is topping every bid by one dollar as long as he continues to walk away, quitting only when he turns and starts back to his seat.

Another will read a newspaper intently during spirited bidding, which means he is good for a dollar better than the last bid. Laying the newspaper aside means he is through.

The following signals mean dollar bids to Ryan who is quick with the eyes as he is with his tongue.

Winking the eye.
Moving the index finger.
Pulling out a handkerchief.
Tapping the foot.
Twirling a hat, and many other signals.

All buyers attending the sale must place a deposit before the sale starts and are given numbered paddles which are held aloft when a bid is made. The auctioneer writes down the number of the successful bidder and announces the price at the conclusion of each lot or item.

Most of the articles are sold in "lots," quantities of lamps and shades, various pieces of furniture, filing cabinets, clothing, etc., comprising lots, while the more valuable articles are sold individually. Perhaps the most intriguing items sold are those tagged "contents unknown," especially suitcases, trunks and other personal luggage. It is like the old game of grab-bag, the buyer never knowing what his high bid won for him. Often enough, such items fetch surprisingly high bids, as the element of uncertainty enters into the picture and most people like to take a chance.

It's a gamble which sometimes favors the buyer, perhaps more often the express company, which from the proceeds of the sales hopes to recover not only part of the claims paid for the shipment, but the express and storage charges accumulated while on its hands.

As sales agent, Cecil H. (Charley) Ryan has been auctioneering for Railway Express Agency for a long time, having started in the express business some 30 years ago. The name "Charley" was given Ryan on his first day of work for the company, by a tough foreman who barked, "CECIL!— Who ever heard of a tough Irishman with a name like that? From now on, it's Charley . . . understand?" And Charley it has been since.

Born in Brooklyn 48 years ago, Ryan started earning a living as a newsboy, then as a reporter on the old *Brooklyn Standard Union,* before entering the express business. Typical of many expressmen, Ryan rose from the ranks, his quick mind and ready wit winning new friends for him wherever he worked. As a supervisor in the vehicle division in New York, Ryan invented the tractor-trailer board system of tracing the movements of vehicles as they shuttled back and forth between the Agency's 37 offices and terminals. The system is still in use today.

RYAN'S bubbling enthusiasm for his job fills him with an endless store of anecdotes which point out the frailities of human nature and he'll tell the yarn whether on himself or someone else.

"I tell my buyers: 'Now don't go crazy on this lot, it isn't worth a dime!' and they bid like mad . . . they won't believe I'm telling the truth!"

Right: **Seated behind Auctioneer Ryan, Margaret Weiss tabulates sales, identifying highest bidder by his numbered paddle.** ***Right, below:*** **Service medal ornaments for civilian wear bring spirited bidding.** ***Right bottom:*** **Buyers are always on lookout for novelties such as manually operated fan examined here by Tom Dooley. Such items bring high prices**

Once during a sale, he was extolling the quality of an upholstered chair with a reversible cushion, and gently chiding the buyers for low bidding. Dramatically reaching for the cushion as he spoke, he was startled by a mouse which leaped from under the cushion and scurried away.

Unabashed, Ryan took up from where he left off, saying:

"The bid was $7.00, but that included the mouse too . . . So whoever buys this chair will receive a dollar in refund . . . Who'll say $8.00?"

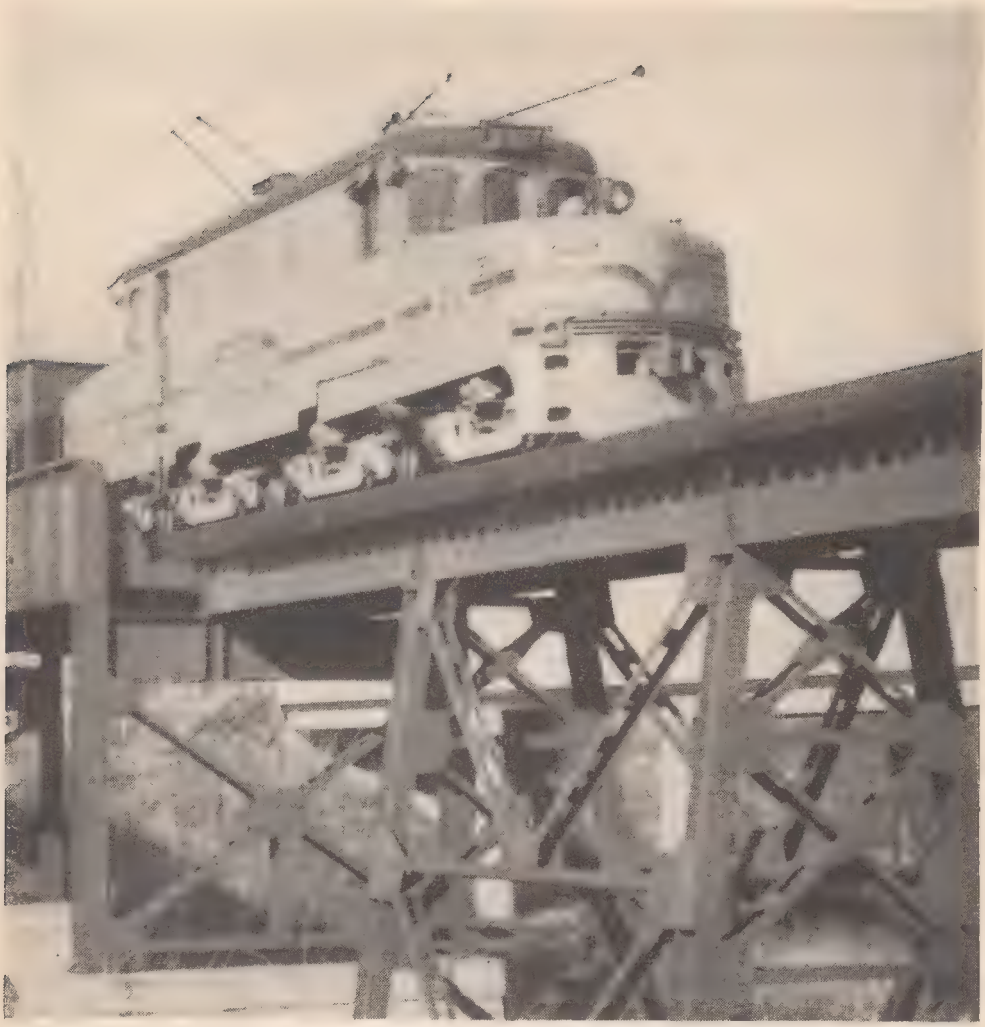
To point out that people should never be too sure of themselves, Ryan tells the story of the hotel magnate's lost trunk which contained a built-in bar with all the accessories. His description fitted perfectly with that of a trunk the No Mark Bureau had just received, with but one exception—it was blue, while the hotel man said his was green. He was positive about it and said so in no uncertain terms. When he was offered irrefutable proof of the contents, he finally admitted, somewhat sheepishly, that he was wrong about the color of his trunk. He was heard to mumble as he walked off.

"Confound it . . . . . I KNOW it was green!"

Electric Lines

ILLINOIS TERMINAL RAILROAD

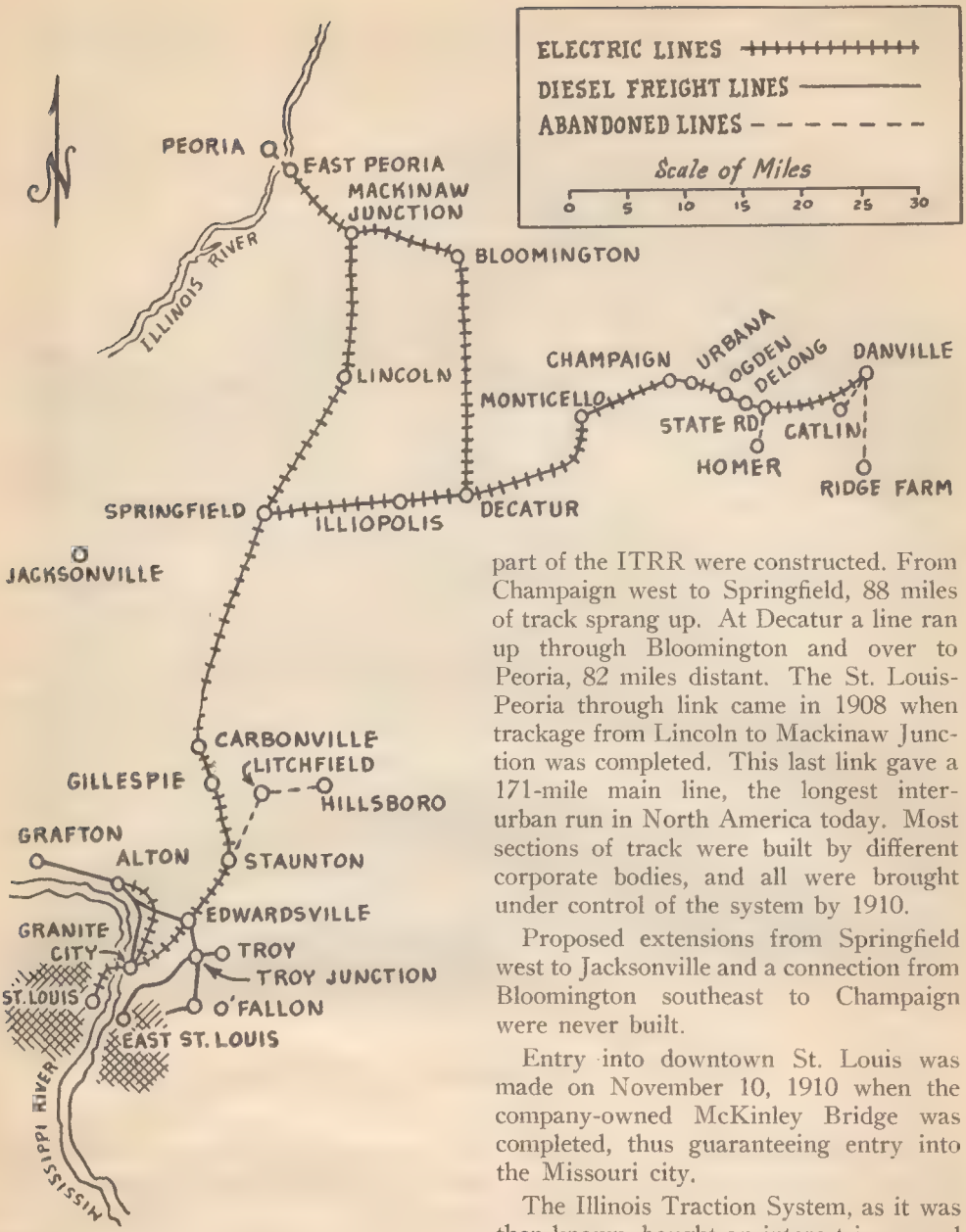
The Longest Interurban Run in North America Today —That's ITRR's 171-Mile Main Line. With Diesel-Operated Freight Trackage the Total Is 476 miles



STEVE MAGUIRE

FOREMOST among the electric traction lines of today is the Class I road known as the Illinois Terminal Railroad, with 476 miles of electric and Diesel track. In these days when so many electric lines fold up because of their failure to keep up with the progress of the day, it stands to the great credit of the Illinois Terminal Railroad that it has kept its superior electric service up to date with the changes in the railroad industry.

Historically, the ITRR dates back to the incorporation of the Danville, Paxton & Northern Railroad as an interurban in eastern Illinois. This road constructed 6 miles of interurban track from Danville to the mining town of Westville in 1901 and in 1902 extended its line 6 miles further, to Georgetown and Ridge Farm. Another branch was built to Catlin, 4 miles out of Danville. Although these were the first routes of what was later to become the ITRR system, their value as traction lines was small and they were both abandoned



in the depression, a not uncommon occurrence.

First portion of what is now known as the main line of the ITRR was built in 1902 from Champaign east to St. Joseph, and by 1903 construction reached Danville, the eastern terminus of the road. Thereafter, at a rapid rate, the network of interurban lines which were to become part of the ITRR were constructed. From Champaign west to Springfield, 88 miles of track sprang up. At Decatur a line ran up through Bloomington and over to Peoria, 82 miles distant. The St. Louis-Peoria through link came in 1908 when trackage from Lincoln to Mackinaw Junction was completed. This last link gave a 171-mile main line, the longest interurban run in North America today. Most sections of track were built by different corporate bodies, and all were brought under control of the system by 1910.

Proposed extensions from Springfield west to Jacksonville and a connection from Bloomington southeast to Champaign were never built.

Entry into downtown St. Louis was made on November 10, 1910 when the company-owned McKinley Bridge was completed, thus guaranteeing entry into the Missouri city.

The Illinois Traction System, as it was then known, bought an interest in several steam lines in the St. Louis area in 1925. In 1928 these roads, the St. Louis, Troy & Eastern and the St. Louis & Illinois Terminal Belt Railway, both steam lines, were acquired outright, as was the St. Louis & Alton interurban line. All were brought into the newly-formed consolidation known as the Illinois Terminal Railroad Company, giving the new company a

total of 476 miles of track serving the busy agricultural centers of central and southwestern Illinois and the industrial area surrounding St. Louis. Now these steam lines are Dieselized.

Don't tell any ITRR official that the road is an interurban line—he will most certainly disagree. And he can give you some arguments of merit to show that most of the old interurban flavor is gone and the road is now a Class I electric railroad.

However, before getting into the many progressive changes since 1928, let us point out that the ITRR was a first-class interurban line in its electrified portions. The big, old steam-coach-roofed interurbans with their upper stained-glass window sashes, were among the most picturesque cars traveling over the flat, fertile plains of Illinois. Although years before, several belt lines had been constructed to take the cars around some of the cities along the line, they still operated in interurban fashion with many occasional stretches of middle-of-the-road running, and the terminals in Peoria, St. Louis and elsewhere were all reached by street-running, cutting down considerably the overall speed of the fast interurban cars.

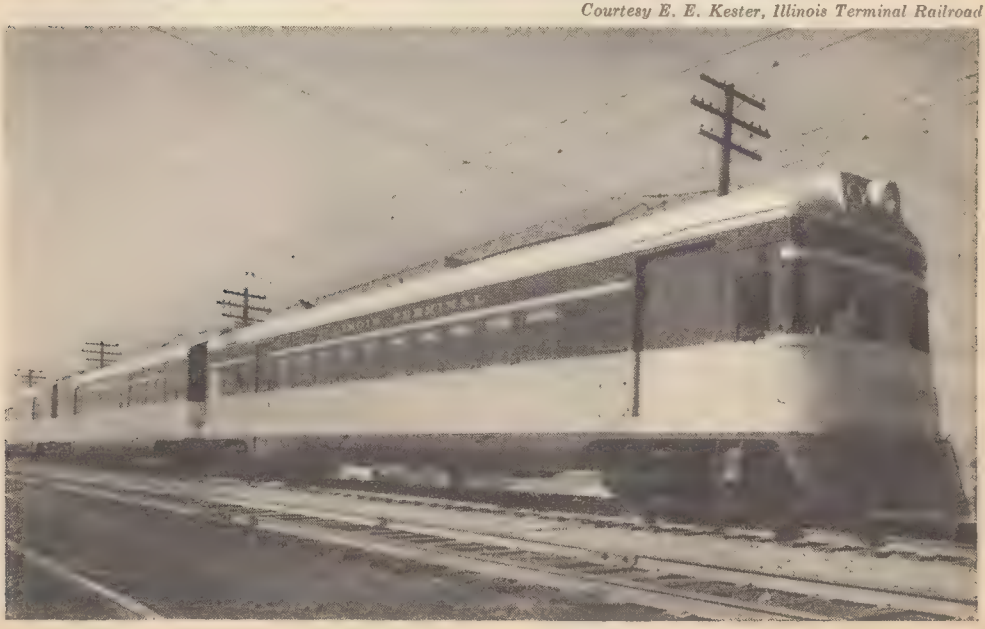
Freight in carload and lcl. service was handled, as was mail and express. In addition, the line was one of the first to institute sleeping car service over an interurban route. As early as 1905, sleepers were operated from Danville to East St. Louis on a run of more than 200 miles. Sleeper service continued until 1940. Buffet dining service is still provided on some trains.

In 1929 the large ITRR building on North 12th Boulevard in downtown St. Louis was completed, and this is reached by an elevated and subway route that takes the cars off St. Louis streets except for a few hundred feet of track. In the downtown portion of the subway line is a warehouse plus the 7-story building that serves as a terminal station and office building. Since its opening in 1931 several industries have located on the subway route, which serves freight as well as passenger business, including two of the largest newspaper plants in St. Louis.

Between 1930 and 1933 new stations were erected at Peoria, Springfield and

Smart blue and silver interurban train is one of 3 built by St. Louis Car Co. for Class 1 ITRR in 1948. They are regulars in East Peoria to St. Louis service

Courtesy E. E. Kester, Illinois Terminal Railroad



Steve Maguire

Shown at Springfield, No. 1561 is one of several juice motors renovated and streamlined in the 1940s to help handle profitable freight revenue

Decatur, but the Peoria station was vacated by the road last year and the line was cut back to the east side of the Illinois River. However a new station has been constructed in East Peoria.

OLD interurban equipment which had served the line for 40 years was well maintained even through World War II, but orders were placed in 1946 for three streamlined electric trains to supplant most of the older cars. These were delivered in 1948 and 1949 and now form the base of operations on the main line.

But, in common with so many other passenger-carrying roads, passenger traffic fell off considerably after the end of the last war and left the ITRR with frequent passenger service on relatively lightly-traveled runs. So, last year the road petitioned the ICC for permission to take off three of the six trips from Danville to Springfield, and followed this with a plea to cut service on the Peoria-Decatur run in half. The ICC permitted these changes in the interest of economy to the road.

Since these necessary cuts in service, several older cars have been rebuilt and modernized—as much as possible on equipment of early interurban vintage. Other cars have been scrapped, including No. 270, which with its mate 271, were among the longest interurban cars ever operated. These two cars were purchased in 1909 from the Columbus, Delaware & Marion Railway in Ohio. The CD&M had bought them new in 1907, but they were not suitable for its service and so

Bucolic serenity in Fairview Park, Decatur, Ill. was undisturbed by ITRR No. 270 on 88-mile Springfield-Danville local run. No. 270 has been scrapped, but sister 271 continues to operate in East Peoria-St. Louis service

Paul Stringham

Low-slung 455 was built for ITRR by St. Louis Car Co. in 1949, replacing older equipment in Granite City-St. Louis local service. ***Below:*** Bi-power electric-Diesel freight hog

Below: Local freight near Heyworth, Ill. in 1942 on Peoria-Decatur Division

were sold to the Illinois line, where they had run for 40 years. Both have been rebuilt on several occasions and were air-conditioned a few years ago. Car 271 will continue to operate until cuts in the East Peoria-St. Louis service are made.

Freight service on the ITRR continues to be profitable, and around 300,000 cars of revenue freight are handled on the Diesel routes during the year. Several of the juice motors were renovated and streamlined in the 1940s, and on the steam lines Dieselization has been completed since 1949.

The Alton Division's juice line has not changed much in the last few years. Center door interurbans give service in single and double units on this route but are hampered by much street running in Granite City and Walshville, adjoining Granite City, cutting down their scheduled time considerably. At Grafton a rail motor bus operates over the Diesel road portion to Alton, 15 miles north.

In Granite City local streetcar service is provided on a loop-shaped route that begins and terminates in the St. Louis subway station. New cars were purchased for this route in 1949, double-ended PCC cars built by the St. Louis Car Company. In rush hour service they are supplemented by older trolleys, these being St. Louis-built, too.

When traffic decreased on the East Peoria-St. Louis route, the ITRR last February petitioned for discontinuance of some trains. These are Trains 87, 85, 93, 80, 82 and 86, plus Trains 81 and 84 operating between Springfield and St. Louis. To date we have received no report of the final determination. However, it is expected that permission will be given to discontinue the runs. The road can show that in 1950 there was a net loss of $175,000 in East Peoria-St. Louis passenger service and the eight trains were responsible for $101,000 of this loss. The remaining eight trains still to run show a loss of $74,000. Only train to show a profit on the route was the northbound *Sangamon,* a streamliner which made a net of only $1400.

If the requests are granted, the East Peoria-St. Louis service will consist of the early morning turn-around run from St. Louis to Gillespie, handling mail on the northbound and commuters on the southbound trips. There will be two limited runs of 4 hours 55 minutes between the terminals at East Peoria and St. Louis and one local run of 5 hours 10 minutes. The two 3-car streamliners will handle the limiteds, with the third streamliner kept in reserve when either train has to be shopped. The local run will be handled by one of the modernized interurban trains.

THERE have been few abandonments of lines on the ITRR. Short branches to Hillsboro, Homer, Catlin and Ridge Farm were torn up in the depression years, and the old route to East St. Louis was razed on completion of the subway terminal in downtown St. Louis. But aside from these and a few relocations of track to better service, the entire route, electric and Diesel, remains.

There unquestionably will be one change—abandonment of the easternmost end of the ITRR, between Danville and DeLong. This is expected to take place shortly. A petition to the ICC for a certificate of public convenience and necessity permitting the abandonment of this 14-mile piece of trackage was filed last April 23. Reasons: the bad condition of rail in the streets of Danville; light revenue, which causes a sizable deficit, and lastly, construction of a new federal aid route into Danville from the west, which will be located on West Main Street. Trains on this street would be hazardous, the company contends, and at the request of the City of Danville, the company is seeking to give up all service here. We might also mention there are some heavy grades, bad curves and a number of bridges from DeLong to Danville, making maintenance costly. Besides, there are few industries along the 14 miles.

Net operating loss on this small segment of the 121-mile Danville-Springfield route in 1950 was $78,000. Expenses are

considerably greater than the small amount of freight and passenger traffic handled, while the rest of the run to Springfield, 107 miles, is operated at a profit. Abandonment has been planned for some time. No industries have been permitted to locate along the strip for a year or so, and all freight solicitation has ended. While no one wants to see abandonments of any portions of rail routes, in this instance it is apparently to the best interest of the railroad that it be permitted.

All ITRR shops, both electric and Diesel, will be moved to a 27-acre location near Edwardsville within the next two years. There, a new million-dollar, combined electric and Diesel shop will be built and all equipment will be serviced there. This particular location was selected since it is conveniently located to all company lines. The Granite City and Decatur car shops will be closed, as will the Diesel shop at Federal. Another improvement was the new passenger and freight terminal completed at East Peoria, the new northern terminus of the road. This cost $100,000. At St. Louis a new steel flooring is to be installed on the McKinley Bridge over the Mississippi at a cost of $1,000,000. This will take four years to complete because of the heavy flow of vehicular and rail traffic over the toll bridge. And the current rail program calls for 12 miles of new rail and fittings and washed gravel ballast on the line to East Peoria from St. Louis. This route is always particularly well maintained.

At Selbytown, a few miles north of Springfield, a main line curve is being eliminated. This old reverse curve around an abandoned coal mine had slowed up trains considerably. New right-of-way is cut through, poles are in place, track work is practically completed.

So, all in all, it looks as if the Illinois Terminal Railroad Company is one electric line that is not going to be abandoned.

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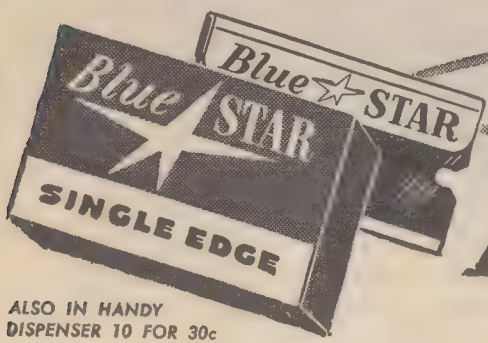
Try a Blue Star Blade on hard-to-shave spots. See how much shaving pleasure it gives you for so little money. Shave and save with Blue Star today.



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Carbarn Comment

MONORAIL has been recommended by a committee of the California Legislature as a solution to the traffic problem in Los Angeles County.

"Saturated highways, now crowded bumper to bumper nights and mornings, and slow, crowded streetcars and buses must be supplemented by a new rapid transit system," the report declared. Passing aside any recommendation for subways because they are impossible to finance for suburban operation, the committee said, "The new system must be an overhead operation that will meet all the requirements of low fares, fast movement and safety. Long study leads to the conclusion that monorail is the only practical answer for these transportation requirements."

The first monorail system proposed would operate in the bed of the Los Angeles River and would run from San Fernando through Van Nuys, North Hollywood, Glendale, industrial Los Angeles and beyond to Long Beach. Cars would travel at speeds averaging 30 miles an hour, and would be fed at stations by surface lines, preferably buses.

While the whole plan is only in the talking stage, the privately-operated Monorail Engineering and Construction Company of North Hollywood has been actively promoting the scheme and claims to have only recently modernized the Wuppertal system in Germany. The same corporation has surveyed a right-of-way from Van Nuys to Long Beach and is actively engaged in pushing that project, too.

What will develop in the efforts to solve the serious highway traffic problem in Los Angeles, we cannot say. If the Pacific Electric Ry. had had the foresight to convert its busy routes to rapid transit by using tracks in the new freeways, it might well have solved the problem. As it now stands, with only a skeleton of its once mighty interurban system, it can readily fall prey to competing methods of transportation. Should the proposed monorail scheme ever be completed, it would undoubtedly mean the end of PE's lines to Glendale and Long Beach, the backbone of the railway system.

MEMORIES of the old Boston, Revere Beach & Lynn narrow-gage electric line have been revived in Boston through the construction of a 2-mile rapid transit extension from Maverick Square to Orient Heights, much of it running on the abandoned roadbed of the BRB&L. Scheduled to open on November 1st, the line to Orient Heights is the first step in a contemplated extension that will be built to Revere Beach and possibly on to Lynn, almost entirely along the narrow-gage electric right-of-way which last saw service in 1939.

Francis Curran of Holliston, Mass., sends us a clipping from the *Boston Post,*

which says, "The new extension runs along a portion of the nostalgic narrow gage roadbed and will, eventually, retrace most of the seashore route, if recommendations to extend it to Lynn are approved. Youngsters who once carried their sand pails, shovels, red balloons and shoe boxes full of food and climbed aboard the toy trains of the narrow gage are now middle-aged parents with youngsters of their own.

"Gone are the ferryboat rides, but you'll see a lot more scenery when you travel along the tracks of this new MTA extension. From the platform of Airport Station you'll look down on a broad panorama of Logan Airport and the new East Boston football stadium and playground area. Beyond the next station, Day Square, the tracks follow the edge of the Harbor View section and scoot close by the new bathing beach established for East Boston kids on vacant marshland.

"Next season, race track fans will have direct, no-change service almost to the sills of the pari-mutuel windows of Suffolk Downs."

According to Bill Kenney of Boston 31, the construction to Orient Heights is nearly three years behind schedule, and the line is authorized to be constructed to Revere Street in Revere Beach. However, price rises may have made the further extension impossible with no additional money available.

Since the new extension will take an estimated 80 percent of the crowds away from the trolley and bus connections at Maverick Square, plans are being made to convert the rail lines to trackless trolleys. It is planned that eventually all East Boston, Chelsea and Revere lines will be converted from streetcars to trackless trolley.

Kaiser Steel Corp.

Above: **Prelude to rebirth. In Hades-like scene, outmoded Pacific Electric cars are scrapped to feed Kaiser Steel furnaces at Fontana, Calif.**

For the new service, 40 lightweight rapid transit cars have been delivered by Pullman-Standard. They are modernistic, with large picture windows 4 feet wide and 3 feet high. They will operate by third rail in the subway and under pantographs beyond the subway.

* * *

BIRMINGHAM ELECTRIC COMPANY sold its transportation lines to a group of Birmingham businessmen this summer, and the new owners are now operating the rail and bus lines under another name, the Birmingham Transit Company.

Four hundred vehicles, including trolley, bus and trackless vehicles were transferred in the sale. The original Birmingham railway line was opened in 1884 as a 1-mile mule-car route in downtown Birmingham and through successive mergers and constructions, has developed into one of the largest transportation properties in the South.

J. H. Goodson of 1411 North 19th Street, Birmingham, says that the City Commission wants the transit company to discontinue all of its streetcars in favor of trackless trolleys and buses, but the company has made no move to do so. There are 5 streetcar routes in the city and the original plan for buses, still in effect, calls for four to be retained. Once delivery is made on an order for 63 more buses, the Ensley route will go, and possibly one of the two routes to Bessemer. This will leave the system all PCC-operated.

* * *

TRUSTEES of the Third Avenue Transit System, as we have warned our readers in the past, are again trying to bus the 26-mile Yonkers streetcar system. They are spending $12,000 for a survey which they say will determine whether they will completely abandon the operation or substitute buses.

The company claims the electrics lose $250,000 a year and estimates rehabilitation of the streetcar lines would cost $2,500,000. While our readers can well realize how ridiculous these figures are, they may be even more surprised by the proposition the company wants from the city in return for bus substitution. They ask, no less, that the city agree to eliminate all franchise taxes, make temporary emergency repairs and free the transit company from responsibility for paving repairs.

If the City of Yonkers falls for such a ridiculous scheme, then it deserves just

Double windows give Boston's latest orange and cream electrics continental look. No. 3313 is one of MTA's newest PCC cars

In Shantytown suburb of Bessemer, Ala. is Birmingham Transit's 547 on 10-mile run, Vinesville to North Bessemer

the same fate the Bronx received when it let the TATS substitute buses for the reliable trolleys. You can still hear the wails of would-be passengers as the infrequent, jammed busses pass them with a load of unhappy standees jammed like sardines. The waiting patrons know full well it may be any time up to an hour when the next bus will arrive.

* * *

A THIRD Supplement to the *All-Time Roster of Pacific Electric* has been issued by Ira Swett of 1416 South Westmoreland Avenue, Los Angeles 6, Calif. This one includes 96 more photos in its 10 pages and sells for 50 cents. Swett also has published special issue No. 10 of *Interurbans,* containing 8 pages of electric railway news, including 2 pages covering memories of the Eastern Massachusetts street cars. It sells for 25 cents.

* * *

ONE of the most unusual accidents on an interurban line took place in July, on the Sacramento Northern when a 4000-foot section of timber trestle on the Yolo Bypass 9 miles west of Sacramento suddenly collapsed like a child's match-stick house, dropping a 21-car electric freight train, loaded with sheet steel, 10 feet to the marshland below. Four SN crew members were injured. The accident was laid to weakening from floods, and traffic had to be rerouted for a month until repairs were made.

* * *

BLACKPOOL, Lancashire, England has no intention of abandoning its electric cars, just ordering another 25 roomy, speedy, comfortable vehicles, reports Joseph Fox of London W. C. 1, England.

Although modest in mileage, the Blackpool system is acknowledged to be one of the best in the country and the tops in scenery. The line runs from the south of Blackpool parallel to the seashore, crosses the lively promenade in the town center, climbs the cliffs at Bispham, and continues to the busy fishing port of Fleetwood. Thousands of holiday-makers patronize the line.

At the Fleetwood terminal the cars are turned around for the homeward journey by circling a lighthouse, in the middle of the street. Where else may lighthouse keepers travel daily from home to work for a penny or so, and, on completion of a turn of duty, board a streetcar at the lighthouse door and be whisked away.

We helped the hurt engineer and fireman into the spring wagon

BOOMERS EASTBOUND

HUNGRY JOHN Polack sat up after spending the night on a switch shanty seat, and said loudly:

"Say, Slim, did you ever heard of an old guy named Greeley?"

I arose, yawned tiredly, and replied: "Yeah, ain't he the guy that advised all the young men in the East to go West?"

"That's the one," said Hungry. "So what do you say we go the other way?"

I thought over the suggestion, then asked, "Why?"

"Well, it's like this," Hungry said. "Young men that listened to Greeley might leave good jobs back there, and we might snare one of their spots."

Hungry looked at me and asked, "Don't that sound reasonable?" He sat waiting for my agreement or objection.

We were in Birmingham, Ala. and the season was the spring of 1895, a year after

C. A. ROACH

the ARU strike. Jobs were scarce as hell, and we had boomed all over the South without finding anything.

I recalled a remark made by a trainmaster, which went like this: "Boomers invariably do things unexpectedly. Usually contrary to how you'd expect a man to act. Unpredictable like." I grinned at Hungry and said:

"OK, we'll take a trip East. But the first thing right now is eatin'. I want some breakfast. How about you?"

Hungry John never refused to eat, even doubling on extra food if the opportunity came along. He was short and broad. I was tall and slim, with a normal appetite

We took off our overalls, worn to protect the only suits we possessed, and washed our faces at a hydrant, then started out to seek some snake or shack with a pie card.

Later that day, we snagged a rough rattler out of Birmingham over the Alabama Great Southern, heading east. At every division we tried for jobs, and cursed Horace for his bad advice. We never ran into a vacancy left open by a young man going West.

Riding and eating over that pike, which became the Southern Railway years later, was just as easy as working. Every trainmaster asked if we were union men. 'Did you belong to the ARU, or did you quit some job on account of the big strike?' Naturally, we didn't know what they were talking about.

Whether it was our bad acting, or our replies too out of reason for being on the road hunting a job, our statements did not uncover one opening until we reached Danville, N. C. There we found a trainmaster sign on a door leading upstairs to offices of the pike.

We climbed the stairway, where the clicking of telegraph instruments was deafening. We entered boldly, and sized up the place. A smiling young man advanced toward us, and asked, "Can I be of any assistance, gentlemen?"

Being the spokesman I replied, "We are trainmen hunting for a job. Perhaps you can arrange for us to see the trainmaster."

He grinned wisely, opened a swinging gate into the office, and said, "Step this way, and enter the first door on your left."

We followed his directions and entered the sanctum of the high mogul who hired brakemen and switchmen, or fired them. He was a fine looking young man of perhaps thirty, clean-shaven and dressed like a dude, helped by a nice black mustache and nicely combed black hair. With a smile of welcome to us he asked, "What can I do for you?"

I told him quickly. He sat and looked us over for a few seconds, then said, "I needed a man very badly this morning. If you don't mind parting maybe I can give one of you a chance to work."

"OK, boss," I said quickly. "If you decide to engage one of us, you might say which you prefer—a tall skinny guy, or a short broad one."

To show him I was not hard to please, I smiled.

He said, finally, to me: "I believe you might do for the job I have in mind." Then he said, "I'm busy right now, but get your stopping place and see the callboy so he can find you when you're needed."

That being all, we thanked him, turned and walked out the door and down the stairway. Hungry didn't say a word whether he felt put out about me getting the job. Of course, he had suggested that we travel East. As he was clever at thinking of places to go he would be sure to get another bright idea. Anyway, we shook hands and parted reluctantly.

I found a boarding place, took off my one good suit, changed to overalls and hiked over to see the callboy. He was an old man, perhaps sixty. I stated my business and asked for a call when he wanted a brakeman. His name was Halson Brodecker. He told me he had been a conductor, and he began telling me funny stories about his railroading.

The next morning at 5 o'clock I was called for the Richmond local. The trainmaster had arranged that, I felt sure. It took me some time before I figured Hungry had been lucky not to get a job there.

I ate breakfast in an all-night beanery, and showed up at the caboose, where the brakeman was hanging out tail lights. He asked me about railroading 'way out West, and I told him as best I could, while he grinned like a schoolboy. His handle was Aleck Switzer, redheaded and about twenty-one.

At 5:50 the conductor showed up and ordered me to stroll over to the roundhouse and get the engine. This chore was soon done, with the locomotive coupled to the train on the house track. The conductor hiked over for his traveling

papers, and highballed the rear end, as the engineer began pulling out with the skipper in the cab. I was on top, riding high and looking over things. The conductor was about forty, with dark bushy hair, black eyes, and a bristle-like mustache which stuck out like the bottom of a shoe brush. His name was Tom McTodd, and he knew all about everything from the time Columbus arrived in this country and started America. He was a wise Downeasterner. So I kept my chops closed, for the time being.

Handbrakes were used at that time, and as we rolled into Ringgold, the first station, five miles from Danville, I grabbed a brake, and the damned wheel spun around loosely, and I knew the chain was disconnected on the lower end of the brake staff. I ran to another one, and it was also loose. I figured instantly somebody had monkeyed with those brakes for just one purpose—to put the boomer, me, on the hike for other regions. I ran back to the other brakes for the train was rolling into Ringgold too fast and I finally reached ones that held and we made the stop.

I HUSTLED freight unmindful of the disconnected brake chains, and when we were ready to roll to the next station I asked the hogger for a monkey wrench. Hiking back to the first car I looked under it, and could see the eye-bolt, where the chain was attached, had been taken off. I knew it could not be fixed until I found another eye-bolt.

Our next stop was Sutherlin, five miles away, and quite a nice looking village, with farming going on and plenty of life around the depot. I had taken my station five cars back from the head end because of the brake-chain dirty work. I helped hustle freight and set out one car with farm machinery in it. And we rambled on to Barksdale, four miles on, and everything began to look rosy as we pulled up to the depot.

Leaving there we rambled five miles to Pace, and peddled a few groceries. McTodd began asking me about where I had railroaded, and if I liked the business. I assured him there was nothing for my money like railroading, and as we rolled out of Pace he climbed on top with me and rode over to New's Ferry about five miles. In stopping there McTodd reached for a brake, as the grade was down into the station where the engine would get a drink. When McTodd tried to set the brake he jumped back and cursed, then asked me, two cars to the rear: "Say Roach, did you know this brake is in bad order? No chain, or something gone wrong!"

I replied quickly: "Yes, I discovered it rolling into Ringgold."

He snorted and growled, "That damned spook working again."

I asked, with interest, "You say spook?" I looked at him to see if he was trying to kid me.

"That's what I said—spook." He frowned as if my doubting his word hurt his feelings.

I chuckled and stated: "No spook took the chain bolt out of a brake staff, I saw marks of some instrument, perhaps a monkey wrench, on the chain end. Besides, there are two other brake staffs disconnected."

He stood and looked at me as the train rolled to a stop. We had freight for New's Ferry. After the engine took water, we soon rolled out of the village, with McTodd catching the caboose. The swing man rode back in the crummy, and climbed on top only at stations.

It was eight miles to South Boston, and that was quite a lively burg, too. I met the swing man there, and he laughed when I told him what McTodd said about spooks. He was a tall husky lad of twenty five or so, with brown eyes and hair, and a kind of lisp to his speech.

He began telling me about the spook, too, saying: "It's a spook all right, you betcha, cause it sawed three staves outa the water tank one night, at Green Bay. You can see the new staves anytime you look on the back side of the water tank there. The tank was empty when No. 3, the down passenger, stopped for water

that night. They had to cut off the engine and run to Saxe twenty miles for water.

"Ah, hell!" I said. "No spook is going around with a saw cutting holes in a water tank." I stooped over to set the same brake four cars back from the head end—but the brake was loose. It too had been disconnected while we stood on top talking.

We rolled to a stop at the depot, and McTodd entered the station for orders to clear No. 2. I had a car to set out, and placed another one at the corn elevator. I coupled them and walked back to help unload freight. The crew, hogger, parlor man and McTodd were all holding a mysterious get-together and they stopped talking when I walked up.

I asked McTodd: "What's for Scottsburg?" He scratched his head, looked at his train book and said, "Head car set in brick yard, one load in there. Set it on the house track for the south local. That will save them making a drop."

I said: "OK Skipper."

We rolled out and I went over to the engine to talk to the hogger, a squint-eyed man of fifty or so, with gray hair, and a mustache. He had the queerest gray eyes I ever saw; they seemed to move with everything he did or said.

I did my work and coupled up at Scottsburg, then stood beside the train thinking how the crew acted. I decided they were trying to scare me off the job for some nester they knew. Surely there was no such thing as a spook.

McTodd came out of the depot and highballed the hogger, named Hawk. Six miles from Clover, Hawk rambled for all he had to that village. I rode on top, for the day was nice and the country was new to me. Clover was a small stop, with an operator who lived upstairs over the office.

I dropped off as we rolled by, and asked him if there were any car moves to be made.

He grinned at me and said: "A new man. How do you like this road?"

I replied, "Fine. I've rambled all over the U.S.A., and here I stay."

His eyes roved over me as if he was surprised, and he said: "It's hard to get men to stay on this run, I've heard."

McTodd unloaded as we stopped, walked up to the station with his bills out, and called to me as the swing man arrived, "Open AGS 22734. We have stuff for the agent here."

It was small boxes of groceries and a tricycle. McTodd checked the unloading and I closed the door. The swing man grinned foolishly at me as he climbed on top. McTodd highballed Hawk and we rolled north four miles to Randolph, another small station with a night op and agent all in one. He wore chin whiskers but was full of fun and a kidder, digging into every crew member but me. I was a stranger; he might start on me next trip, I thought.

There was nothing to unload, and no car movement, so McTodd received orders to clear No. 2 at Saxe. That being a water stop, we rolled up to the south gate, and I ran ahead and opened it for Hawk to drag in the string of boxcars. The fireman climbed on the tank and stood waiting for Hawk to stop. This done, we rolled down to the depot, did our peddling of junk for the village, and made ready to follow No. 2 when she rolled. In, on time. I stood well back from the gate when she passed. I unlocked the gate, snagged the fourth car as it rolled by, and went on top. About a half mile from Saxe is an ordinary curve, probably a three-degree turn, and we were hardly out of sight of No. 2's rear end, and making perhaps twenty miles an hour when the engine reached the middle of that curve, and—without any warning—the old hog leaped sideways, bucked up on Hawk's side and made a dive for the right-of-way fence. She turned over on her side and, like an old horse when shot, kicked a bit with spinning wheels, while three cars ahead of me followed her. The one I was on stuck to the rails. McTodd and the swing man, both excited, came running as I climbed down off the top. "Jeez," I said to myself, "first it's spooks; then it's off the rails."

I NOTICED something kind of queer the second my eyes lighted on the track. There was a hump under the outside rail of the curve, and somehow I felt that hump was what derailed the hog. Any engine rounding a curve, unless running at a high speed, will lean towards the inside of the curve. Hawk's engine had been leaning inside, and perhaps his eyes were not on the track, perhaps he did not see that raised outside rail. I figured someone raised that outside rail after No. 2 had passed; if not, No. 2 would have made the turnover. However, I said nothing about what I saw, and ran to see if Hawk or the fireman was hurt. They were skinned up a bit, and the tallowpot was half buried under coal out of the tank. But he was able to stand up and talk. Not one of the crew had the least idea what had caused the old hog to jump the track.

McTodd hurried back to Saxe to report and call for the wrecker. The parlor man, swing man and I managed to get the engineer and fireman back to the crummy, where the rear man dug up some liniment and sticking plaster for small cuts. Then he made coffee and the hogger Hawk drank some, but the tallowpot didn't like coffee; he wanted tea. So tea was made and he drank it all while chewing on crackers.

An hour or more later a buggy and spring wagon showed up with a doctor for the two injured men. Doc examined both men and then ordered the man driving the wagon to load them in and drive back to town, slowly. We all helped, with groans and grunts coming from both as if they were nearly dead. Of course, they were scared, and quite likely bruised internally. The three of us stuck with the caboose, and we waited until nearly 1 p.m. before the wrecker showed up.

The wrecker hog pulled our rear end back into the siding at Saxe, then ran around the wrecker and shoved it out to the derailment. With the wrecker came the trainmaster and assistant superintendent—asking 700 questions about how the derailment happened. Of course I was the only one to see the pileup, and I gave my views on the affair. Every few minutes the assistant super would come around and ask me the same questions he had before. It seemed to me he thought perhaps I had derailed the engine.

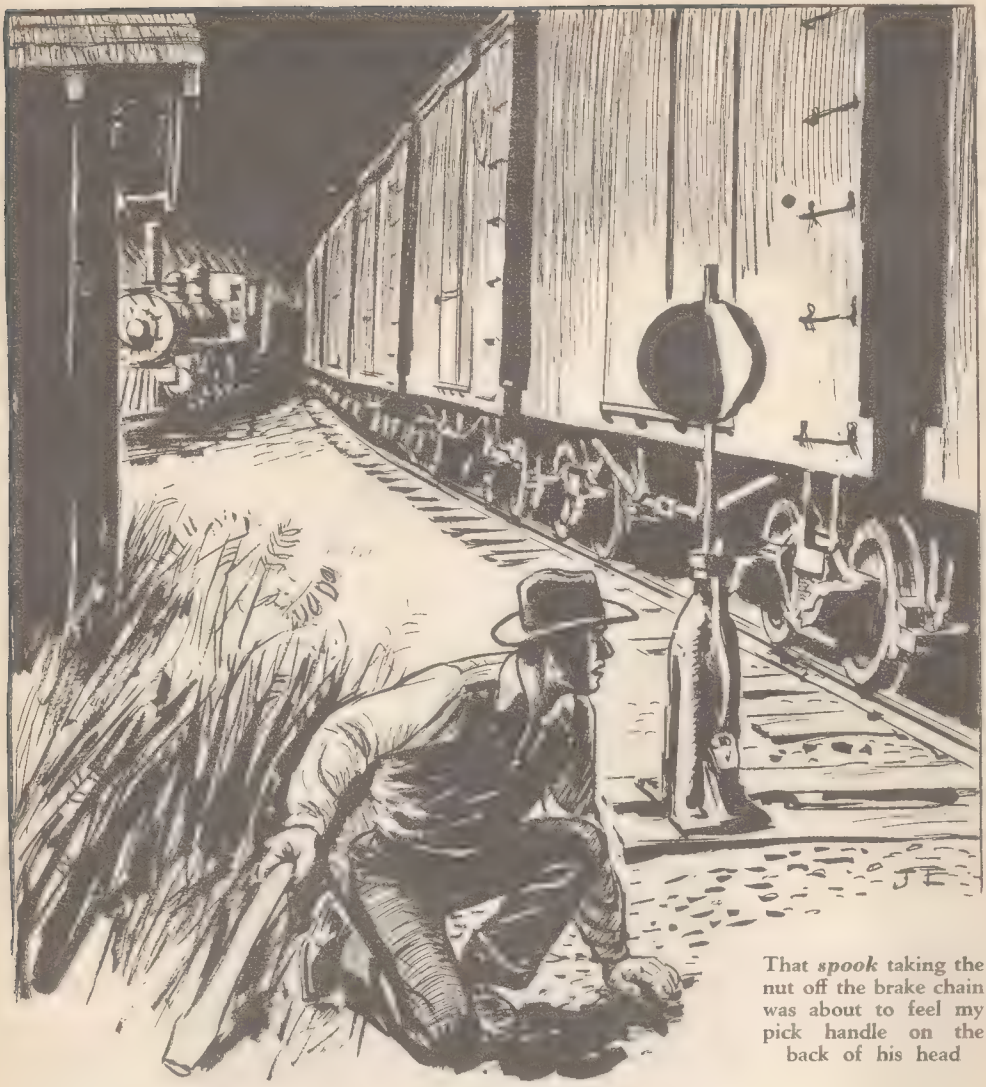
Finally, the wrecker managed to clear the track of all cars, and the old hog being in the clear of the track, it was left until a larger wrecker was brought in from Greensboro on the main line. An extra engine was run out to handle our local on to Richmond, and we managed to get away that evening at 6:20.

It was much different those days than now, for we had no certain hours to work. Our run required we make the trip to Richmond, regardless, so McTodd, with new orders, highballed the new hogger, Terrace Dunn, and we rolled north to Drake's Branch, four miles away. We unloaded local stuff, and I set out one car, and placed another at a coal bin, coupled up, and McTodd highballed me with his lighted lantern. It was cloudy that evening and dark early. The skipper received orders to met No. 3 southbound at Burkeville, eight miles north. Dunn was a good hogger. The old Baldwin *Eight-Wheeler* he had was a speed mill and he let her have the bit in her teeth to run like hell every chance she got.

We cleared No. 3 nicely and unloaded what freight we had from the passing track. There were quite a number of gawking natives around, and they asked if the engine we had was the one that turned over. It seemed the natives along that branch heard everything that happened on the pike. Of course, the agent-op was like a newspaper, spreading everything he heard or saw.

After No. 3 rambled, we highballed for Jetersville, and Dunn certainly rolled 'em for the ten miles—we came to a stop at the depot like a jaybird lighting on a Western Union wire.

McTodd ran to the depot from twenty cars back, as if he had been running all the way from Danville. We unloaded junk for the city, McTodd received his rolling papers and away we went for Amelia,



That *spook* taking the nut off the brake chain was about to feel my pick handle on the back of his head

six miles beyond. We went in the hole for a drag of cadets taking a special trip to Washington. Everyone able to get a head or an arm out a window was doing so while yelling like a wild man.

We highballed to Chula, got a clearance and hit the high iron on to Mattoax, where we peddled freight and loaded some for Richmond. Then we rolled for Moseley, where we shifted some house cars, and were given orders to stay put for a second section of the cadet's special. They rolled by like a cannonball passing up a tramp at a lonely water tank.

From there on into Richmond we didn't make any delivery of freight. McTodd was tired, and wanted to eat and rest before the return next day. It was getting late. We had been on the roaring end since 6 a.m. and it was now 9:45 p.m. —close to 17 hours, and no overtime; that stuff was unknown then. We highballed like nobody's business, making stops only where special perishable stuff was billed, then hightailing it on for town. At last we shot into the great city of Richmond, put our train away, and turned the engine loose to get a feed and have the ashpan cleaned before we started back to Danville at 6.

McTodd led me to a feed shop near the hotel where he dined, and we loaded our baskets with food. I had not tasted anything since leaving Danville that morning. The crews usually ate lunch at Keysville but, owing to our derailment, that service was dispensed with.

The trouble of a train crew on the Danville-Richmond branch line didn't let me forget the idea nearly all crew members had that spooks were responsible for the mysterious happenings already mentioned. McTodd's remark: "The damned spooks are working again," had preyed on my mind all along, but like any boomer, I thought it was a case of the train crew trying to scare me away so one of the natives could get a shack's job for life.

After several weeks of working there, and several times discovering brakes disconnected as before, I set myself to try and discover the party doing this damnable stuff. It was disconcerting to a brakeman when he grabbed a brake wheel and found it had no chain to wind up on the staff. Besides it was dangerous because the train might run away, or cause a brakeman to get hurt or killed. I did not believe such a thing as a spook or ghost was doing it. There was no reason for any spirit to go railroading by monkeying with the controls of a train.

So, one nice summer night, I stuck myself near the Danville yards, where I would not be seen by anyone. When the Richmond local was made up on a back track, which, fortunately, was just what I wanted, I sneaked up close, but safe, to watch.

NOTHING happened until nearly 4. Then I heard footsteps. They approached slowly, as if trying to be cautious. Then I distinctly heard the sound of metal clicking against metal. And I construed that sound was a wrench, or plyers, taking a nut off a brake chain near me. Soon the sound was repeated, and it seemed closer. I sat crouched, listening.

I saw the dim outline of a man's legs, walking quietly on the opposite side of the madeup local.

I edged closer, listening alertly, and took a position where I could see the brake staff on the first car behind the hog when coupled on.

When the spook slipped along to that brake staff and stooped down, I slipped up behind him and, with a good wallop of a pick handle I had purloined from a sectionman's tool box, I struck him just right to daze him. He grunted, whining like, and slowly dropped to his knees, then rested there as if getting his wind. I reached over and grabbed him by the neck band of his coat, yanked him to his feet, and snapped loud enough for him to hear me, unless he was so dazed he could not hear a thing:

"You damn fool, what the hell do you mean taking all the nuts off of the brake chains?"

I shook him until he leaned over close to me and said, "Please don't kill me. I was just wantin' to have some fun. Maybe cause a wreck. I just love to hear of wrecks.

With those words, I knew who the spook was. It was the old and trusted callboy, Halson Brodecker, once a skipper on the Richmond-Danville run.

I marched him to the roundhouse where the night crew was just getting ready to go home. I explained who I was and what I had caught Brodecker doing. I said:

"All this hot air going around about spooks got on my nerves, so I set myself to try and find out what a spook was, and to stop him from taking the nuts off brake chains to cause a wreck. That's what Brodecker just said he wanted to happen. The poor nut is crazy. He isn't safe to have around a yard."

Brodecker knew a car might run five or six stations before the vibration of the train would shake the chain bolt out of the brake staff. Such a queer thing seemed positively uncanny to McTodd and others of both crews doing the local work up and down the division. Brodecker was not arrested, but fired and banned from the yards. But it didn't solve the derailment mystery near Saxe.

No one after that would believe that I wasn't a detective hired and put on as a brakeman to solve the queer doings of a spook. That idea caused me to laugh often.

A few days later, we were rolling south about noon when our engine again took to the brush, and stopped upright, with three cars on the ground behind her. I was back seven cars, riding beside the swing man, and we hit the ground quick, and ran to the hog to see if anyone was hurt.

The hogger Querner and tallowpot Wilson were standing out on the ground, grinning like two kids, as we came up.

Swartz, the swing man, asked, "Not hurt, are you?"

I went about looking over the reason for the hog hitting the ties. Brodecker couldn't be responsible for this one, I thought. I soon found the cause. The steel rails normally were connected at the joints with straight straps having four holes for bolts, but there was not a bolt nor a strap anywhere about.

McTodd came running from the rear end and asked Querner: "What happened to put you on the ground?"

The hogger merely grinned, nodded at me and said: "Snooper here found the strap irons off a rail joint. Guess that's what put me in the ditch."

So, they had a name for me besides Slim. Now I was Snooper. I understood why, and just laughed it off.

McTodd stepped over and looked at the joint without fastenings and decided that was really the cause, for no car or engine could have passed over the joint in either direction without leaving the rails. So McTodd hit the line for Scottsburg to make his wire report.

It being just about noontime Swartz and I walked back to the crummy to eat. I had a basket lunch container, usually enough for an extra meal if I was delayed along the line. It was quite obvious we would be there for several hours, so after eating, I returned to the head end, and began looking for the rail joint straps.

Out beside a fencepost where grass had grown very high I found the missing strap-irons and bolts. I left them there to show the trainmaster if and when he came with the wrecking outfit.

IT WAS four hours before the wrecking crew showed up. The wrecker boss decided to put ties under the old *Eight-Wheeler* 157, and pull her on the track with wrecking ropes and blocks, the spot being quite level.

Since No. 3 southbound had passed the spot just about 30 minutes ahead of us, the rail fastenings could not have been off. That was almost a certainty.

On the return trip north next A.M. when rolling into Scottsburg we learned that an old nester who lived about a mile from the right-of-way had been arrested for tampering with the track, for taking the bolts out of the rail joint, for ditching a local freight.

His devilish idea was spite towards the railroad because he had a cow killed nearly a year before and had never received any compensation for the loss. His negligence in keeping his fence repaired had allowed the cow to shove through to get green grass on the right-of-way. So, another mystery was cleared up.

It was believed, too, that some nester with a grievance against the railroad had sawed the staves out of the back side of the water tank at Green Bay, emptying the tank and causing southbound No. 3 to run some 30 miles to Saxe for water.

Yes, those oldtimer nesters were bad eggs to fool with. They never forgot nor forgave.

Thinking over the matter of how some old cornfed nester might have cause to derail our train some night and kill or mangle me so I would never be worth a damn, I quit the job after two months, and went rambling South. Maybe Hungry John Polack was luckier than me in his trip east.

I have never felt like trying a railroad job East of Cincinnati or Chi again. There're too many odd occurrences way back in the hills of North Carolina, or states bordering thereon.

NOT ON THE WHEEL REPORT — *Joe Easley*

"You're looking at the only boomer railroad president—when does the board meet?"

Locomotives of the

Duluth, Missabe & Iron Range

Class	Numbers	Cylinders	Drivers	Pressure	Engine Weight	Tractive Effort	Builder & Date
			0-8-0 (Switcher) Type				
S5	86–89	24 x 28	51	200	220,000	55,600	Baldwin, 1917
			0-10-0 (Switcher) Type				
S6	90–93	28 x 30	57	245	352,250	86,000	Baldwin, 1928
			0-10-2 (Union) Type				
S7	601–609	28 x 32	61	260	404,360	90,900	Baldwin, 1936-37
			2-8-0 (Consolidation) Type				
C3	319–350	23 x 28	56	190	204,800	42,750	Pittsburg, 1905-06-07
K	190–198	24 x 28	55	200	214,650	49,800	Baldwin, 1905-06-07
	1200–1208	24 x 28	55	200	221,900	49,800	Baldwin, 1905-06-07
K1	1209–1224	24 x 28	55	200	214,650	49,800	Baldwin, 1909-10
			2-8-2 (Mikado) Type				
N	1300–1307	27 x 30	58	200	338,320	64,000	Baldwin, 1913
N1	1304–1305	27 x 30	58	200	338,320	64,000	Lima, 1913
N2	1306–1308	27 x 30	58	200	338,320	64,000	Baldwin, 1916
N3	1309–1311	27 x 30	58	200	338,320	64,000	Baldwin, 1923
N4	1312–1321	28 x 30	63	200	333,000	63,467	Alco, 1923
N5	1322–1325	28 x 30	63	200	333,000	63,467	Lima, 1923
N6	1326–1337	28 x 30	63	200	333,460	63,467	Baldwin, 1929-30
			2-10-2 (Santa Fe) Type				
E	500–505	28 x 32	60	200	376,710	71,200	Baldwin, 1916
E1	506–515	27 x 32	57	200	376,710	69,600	Alco, 1919
			2-10-4 (Texas) Type				
E4	700–709	31 x 32	64	250	520,000	96,700	Alco, 1937
E5	710–711	31 x 32	64	250	520,000	96,700	Baldwin, 1941
E6	712	31 x 32	64	250	520,000	96,700	Baldwin, 1942
E7	713–717	31 x 32	64	250	520,000	96,700	Baldwin, 1943-44
			2-8-8-2 (Mallet) Type				
M	200–202	26 x 40 x 32	57	200	436,000	96,000	Baldwin, 1910
			2-8-8-2 (Simple Articulated) Type				
MS	207	24 x 32 (4)	57	200	494,500	110,000	Baldwin, 1910
M1S	208–209	24 x 32 (4)	57	200	494,450	110,000	Baldwin, 1916
M2S	210–211	24 x 32 (4)	57	200	494,450	110,000	Baldwin, 1917
			2-8-8-4 (Yellowstone) Type				
M3	220–227	26 x 32	63	240	695,040	140,000	Baldwin, 1941
M4	228–237	26 x 32	63	240	699,700	140,000	Baldwin, 1943
			4-6-2 (Pacific) Type				
A	1107–1110	22 x 28	69	200	223,900	33,400	Baldwin, 1913
P	400–402	25 x 28	69	200	254,600	43,200	Baldwin, 1913

Photos from Duluth, Missabe & Iron Range

Ten-wheel Switcher No. 93 has tractive effort of 352,250 pounds and lettering of predecessor Duluth, Missabe & Northern

Oddity on line is any power not built by Baldwin. Alco turned out DM&N-lettered *Santa Fe* 510 plus handful of *Mikado* and *Texas* types

Baldwin *Mikado* 1511, *above*, gains stability from cylindrical Vanderbilt tender. ***Opposite page:*** Modern *Yellowstone* 234 hauls iron ore effortlessly over 563-mile railway, 4-10-0-type pedestal tender easing heavy-duty drag

KEEP 'EM RUNNING

RALPH ANDERSON BENNITT

ASSISTANT camp foreman Bill Ashley felt hot and out of his element behind the firebox of the 2-4-2 work engine. A construction man himself, only a year away from punching cows in southern Texas to work on a railroad in the Brazilian jungle, he wondered why any man in his right senses would pick out the throttle and whistle cord of a locomotive as tools for his life's work.

It was the beginning of Brazil's rainy season, and he had crawled up

into the engine cab to escape a sudden tropical shower. His gaunt, mahogany-brown face showed nothing of his morose thoughts as he listened to hogger Dode Collins gab above the hiss of steam and the torrential patter of rain on the cab roof.

Not that Dode wasn't a good guy and a whiz at running his work engine. He held the position of camp gossip, the harbinger of tidings, good and bad, and he spoke with a New Hampshire accent. He had a round bald head under his greasy cap, and beside Bill Ashley's gangling six feet of mud-splashed khaki, he seemed roly-poly.

In extolling the feats of a new Casey Jones, however, Dode had struck a sour note as far as Ashley was concerned. Yesterday, handsome, go-to-hell Jeff Wright, the hoghead on the regular run from Porto Velho to Bill's quarters at Camp 37, had brought his train over a long swampy tangent on rails six inches under water.

"That boy's got guts," Dode enthused in his down-east twang. "King John told us fellers to keep 'em running, and Jeff is doin' that, you bet." He paused, since any mention of the boss contractor usually brought some kind of respectful comment from any man working on that queer little railroad in Western Brazil.

Bill Ashley only nodded, his tanned face aglow because just then the Brazy fireboy tossed in a few more brickettes of pressed coal. He had troubles of his own. Yesterday, camp foreman Sam Evans had become sick just after they'd started putting in the earth fill under the high, wood trestle near camp. The responsibility of running things had fallen to Bill, and since he felt modest as to his abilities after only one year of construction, he felt like a corporal taking charge of a regiment after the attack on the enemy has begun.

More news had come to Dode, who passed camp on his trips to and from the earth borrow pit. King John is on his way up."

"I reckon," Bill said in his soft Texas drawl, "he aims to pin a medal on Jeff." He stood up, tugging his big Stetson hat tighter on his blond head, and his blue eyes were dark with worry as he peered out.

The shower had nearly stopped, leaving rivulets running down the red clay fill. The borrow pit where the steam shovel was digging would be a mess about now, but something of more importance filled his mind. He wished young Eddie Lucas would heave coal for someone else besides that crackpot, Jeff Wright.

Eddie, Sally Lucas's kid brother! A darn nice kid, even if he had been the one to invite Jeff to ride out from Eagle Pass to the Lucas Lazy L ranch. That had happened only a month before Bill's sudden departure from Texas for the mythical land of the Amazon River. He couldn't blame Eddie because Jeff had kept on going out to the Lazy L for several more months. After that, Jeff and Eddie had also fallen for the lure of foreign gold.

"Everybody likes Jeff," Dode continued, unknowingly twisting the barb in Bill's breast. "How come you don't?" Oh—all right. I forgot you three fellas all come from Eagle Pass."

"The rain's stopped," Bill said, "and I got a job o' work."

He swung down and looked up and down the track for Vicente de Cunha, his *feitor* or straw-boss. The jungle growth beside the clearing dripped dismally; the unballasted roadbed had become a hog-wallow. The sun came out and brought hot vapors from the ground and clouds of piums and sweat bees from beneath tree branches and trestle timbers.

Dode Collins grinned as he leaned out the cab window. "Better get the rag out, Bill. Your contract may be up next week, but you know how The King likes to send guys down the river."

Till now Bill hadn't considered that angle, though he was aware that any employe discharged before completing his year's contract had to pay his own way home. For most men, what with the heat, the insects, the fevers, and the

monotony of camp grub, one year was plenty. Still, many hardened ones renewed their contracts—if so invited—after the annual vacation to the States.

"King John ain't worried about me," Bill said.

He frowned. A man *could* get himself decorated with a pink ticket—whether from a railroad construction job or a cow ranch. He could be fired when he had done no intentional wrong. He still held a painfully sharp recollection of the day Old Man Lucas had fired him back in Texas.

Up to then Bill had not disliked all locomotive engineers. A matter of the Sunshine Special running into the Lazy L herd Bill was driving to Eagle Pass had changed him. The hogger could have stopped his train but had not. The accident altered Bill's plan of marrying lovely little Sally and living on a nice little cow ranch; he had signed up to go to Brazil along with other local boys.

To old man Lucas, a colonel who had once fought "the Damn-Yanks," letting eight cow-critters get mashed constituted a grave dereliction of duty. And granddaughter Sally's brown eyes had flashed even greater scorn the next day. A cowboy who'd take up with construction bums and go 'way off to Brazil where twenty-foot boa constrictors dangle from the trees, need not bother to come back to the Lazy L any more. Never!

"Suppose," Bill drawled to the grinning Dode Collins, "you prod your teakettle on down to the borrow pit and fetch us another load of red clay."

"I will if that steam shovel ain't bogged down."

The work train rattled off the trestle to shriek on south through the hundred-foot swathe in the forest, and Bill set off along the high structure. He was proud of the culvert he'd built down below, and he didn't want any dumb hoggers dropping boulders on the green concrete.

The quickly rotting timbers of the trestle provided only a temporary means of transportation for the work farther south along that strange, two-hundred-odd miles of railroad. The job had been attempted twice before only to fail because of the terrific difficulties and loss of life.

Acting foreman Bill Ashley paused directly above the rushing stream. The tall structure quivered from the force of water already partly imprisoned by the earth fill they were making. He spat overside, thinking, "That will travel two thousand miles down the Amazon before it hits the ocean."

That reminded him he was about to make the same trip. Till this morning it had been something to dream about, even if Sally hadn't answered the letter he had finally written to her. Now, what with Foreman Sam Evans taking sick, Old Lady Opportunity seemed to be rapping lightly on the Ashley door. Why not sign up for another year? Jeff Wright, now equally far from the Lazy L, would be no greater threat than before.

AT THAT moment King John's auto-carril came around a curve well to the north of the trestle, and Bill dropped down from the clouds. He glanced about, wondering what he could be doing wrong, a question many a man on that jungle pike had asked himself. Not that the boss contractor was mean and critical of unimportant details, but his cool-eyed glance had a way of ferreting out mistakes.

A dozen of Vicente's Brazy laborers were now cleaning the rails of mud, and Bill picked his way over the slippery ties to where the motor-car waited. "We'll have'r clear in a minute," he said as he shook hands with the boss. "The rain sort of stopped things."

"Ever try to work your men while it's raining, Bill?"

"Once." Bill wasn't sure, but he had a hunch King John was testing him. He watched the compact figure in white duck as the contractor stepped down. "They'll stand out in the rain like a lot of lost dogies but they won't work."

"I just wondered," King John laughed. He seemed to be in an unusually good humor.

That might be because his long, difficult contract was moving well, if not actually whipped. There still remained over fifty miles of track to lay; they had to grade a lot of roadbed, build bridges and culverts—a thousand things to look after.

"I got word," King John said, "that Sam Evans had gone in to Candelaria Hospital with beri-beri so I came out a day earlier than I'd planned."

"Sam's tough. Give him a sea trip and he'll pull through."

Poor Sam! He had left camp saying he had malaria—which was bad enough, but beri-beri! With that you get out of the country or they plant you for good. Sam might return; others had. A swell guy to work for; big-hearted and willing to teach a young fellow what he knew about construction. One lesson was, "Keep your trap shut so you won't put your foot in it!"

Perhaps to read what went on behind Bill's blue eyes, King John lighted up a black native *charuto,* then blew out smoke gustily. "Think you can finish up here without Sam around?"

"You mean," Bill gasped, "I'm to be camp foreman?"

"I didn't say that." King John chuckled, no doubt because Bill's sail-like ears reddened to the color of a Texas sunset. "When can you finish this little job, Bill?"

Little job! "Three, maybe two weeks," Bill hazarded, "if the shovel hangs together and the men show up for work on Monday mornings." He wiped sudden sweat off his freckled forehead. A foreman ought to be definite. He had already figured that at the rate of a thousand cubic yards a day it would take fifteen days. On one good day they had equalled that performance.

"Two weeks, nothing! You get till a week from Saturday night—eight days. So dust off your brains, Bill. You make good here and I'll give you a crack at something better. I'm opening Camp 42 . . ." The contractor stopped to relight his eternal cigar, leaving the rest to Bill's fertile imagination.

"I reckon, then, I'd better clean out the women and the *cantinas* near camp. We get only half a gang on Monday mornings."

"Won't your men kick some, Bill?"

"Prob'ly they would." Bill scraped mud from a boot heel, certain now the boss was testing him. "I reckon I better not. I don't want to make a mistake the first pop."

King John dropped a hand on Bill's shoulder. "You decide, Bill. Remember, you can make a big mistake through fear of small blunders. Be right three out of four times and you're a whiz."

"Uh-huh," Bill gulped.

"Be wrong three out of four times," King John added, "and you'll go down the river with pink tickets hanging all over you."

The auto-carril bore away the hard-boiled philosopher, and Bill rubbed his lean jaw. "There ain't a hell of a lot of slack in that," he grumbled.

The rest of that day the new acting foreman vibrated between trestle, camp and borrow-pit, urging the men, black, brown and reasonably white, while thinking of ways to speed up the movement of earth from one place to another. He had Dode and his work engine, one steam shovel and two trains, each with fourteen five-yard cars, with which to do the impossible—improve fourteen trips per day. The answer was elementary. Dode would have to do twenty; that is, he'd have an average of twenty-four minutes per trip.

The big steam shovel, Bill noticed, could load faster than Dode could haul away and bring back *if* the cars could be spotted within reach of the shovel. By rigging a block and fall to a tree and to one end of the train being loaded, he fixed it so a half dozen men could move the train after each flatcar was loaded. Thus the work engine could hook on without waiting.

At the trestle, he saw they'd been losing time in gettting the "snowplow" and its steel cable into position for scraping the earth off the flat-cars. He made a second scraper, using some old cable, built

a gallows frame across the track for loading the scrapers, and cut eight more minutes from each trip.

NEAR SUNSET, operation met construction—always a chance for fireworks—when Engine No. 8 squeaked to a stop at the trestle. Jeff Wright, hogger on the run from Porto Velho, swung down and came up frowning at his watch. The work train—on its nineteenth trip—blocked the line, and crawling across the swamp behind him had made it a tough run for Jeff.

His dark eyes flashed as he greeted Bill Ashley. "Hey, Mud-Rassler, when are you going to learn transportation comes first? King John says to keep the trains running, so get your gandy dancers and mud scows out of my way."

As usual, Jeff's blue jumpers, overalls and cap looked neat, and his black hair and clean-shaven face always looked as if he had recently left a barber shop. He stood as tall as Bill but was somewhat heavier.

"Hi, Grease-Ball," Bill returned. "When you gunna bring in that imitation train on time? I waited, then figured you wouldn't be along till next week so I ordered Dode to haul another load. You can wait now till we're plumb scraped off."

Jeff spat sourly. "It sure takes a half-baked boomer to gum things up. As if it wasn't bad enough running a smoker over a track laid on tree branches, I wait on a dumb construction gang which plunks its junk in the way of regular railroaders. Hold me up just once more and Maginnis 'll hear about it."

"Turn me in," Bill defied. "We'd get this little old railroad job done if you grease-balls would remember that's all you're here for. You think you're chauffeur of the 'Shoe-Shine Special'?"

"No, lucky for me. You'd drive cows into me."

That opening of an old wound seemed uncalled for. The hurt of it lay behind ten months of silence during which Bill had not written to anybody on the Lazy L

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ranch. He clenched his fists but Eddie Lucas came up just then and averted hostilities.

He seemed so much a masculine replica of his beautiful if stubborn sister that Bill got a heartache every time the lad appeared. True, Eddie had thus far held a neutral position as to his future brother-in-law, but he could change. Working constantly with Jeff and listening to his bragging might do that. It was plain enough that to Eddie the man in the driver's seat of No. 8 sat one notch higher than any Greek god.

Guessing that, Bill felt none too optimistic that he'd ever get an answer to his two-month-old letter telling Sally of the fourteen hundred dollars he had saved, why it existed, and how they should add to the stake against the day he became a contractor himself on construction work.

Sunday morning, Jeff Wright rattled off with his string of mixed coaches and empties, and Eddie's smiling goodbye reminded Bill of something important. In the privacy of his palm-leaf hut he gazed at Sally's photograph while he compared the hard, humdrum life of a cowboy with the equally hard but thrilling one of a construction man. She'd have to give in to his following construction work. He couldn't help it; he was like that.

A thud of hoofs, a creak of leather and a jingle of spurs preceded the entry of a fat little man in Brazilian army uniform. *Tenente* Martines commanded the small garrison opposite the Bolivian one on the wide Mamoré River. His beady black eyes looked a little red as he launched into a string of Portuguese.

The *tenente* wanted Bill's straw-boss, Vicente da Cunha, banished from camp. Out! Now! Romance of a sort was at stake; a rivalry in which *Tenente* Martines seemed to be fighting a losing battle. Knowing that the capable little sub-foreman was the present favorite of sloe-eyed Maria of the *cantinas* adjoining camp, Bill nodded. "I'll clean out the whole nest, *tenente*."

"Only Vicente is to go," snapped the fat little officer. Maria, of course, and the others are to remain where they are."

Bill did not fire Vicente, and, while in no sense a reformer, he clung to his original idea. By noon the camp hangers-on were trekking out of there, male and female, Maria included. They all cursed *os yanquis* as they departed.

Hell broke loose during the Sunday evening supper of beans, rice and salmon. The six Yanks in the first-class mess were startled when a dozen .30 caliber rifle bullets zipped through the palm-leaf walls and roof of the dining-shack. A general scramble for carbines and six-guns followed the resulting urge to throw hot lead in answer, and Bill loomed up among the first.

But as they deployed through the surrounding jungle, he had a chance to think things over. It dawned on him that he was in charge, and to the astonishment of all, including himself, he called a halt on any shooting war. "Nobody's hurt, fellers, not even the Chink cook. King John can fight this out with the governor."

"Goshamighty, Bill," Dode wailed with several others. "What's got into you, spoilin' our fun? We let these yella-bellies get away with this and we'll never hear the end of it."

"Shut up, Dode," Bill said, though he'd thought of the same uncomfortable aftermath. "We're supposed to be buildin' a railroad, not fightin' the folks putting up the *dinheiro*."

The financial angle wasn't strictly true but it served the purpose. "Honor" satisfied, the *tenente* jeered and withdrew his troops. It left Bill in a tough spot during the days that followed Dode's soul-shriveling prophesy.

Tuesday, King John blew in with the government fiscal engineeer. "Don't let 'em get your goat, Bill," the contractor said with a laugh. "You may be low on diplomacy but you kept us out of a real mess by using your bean. The fiscal reported the shooting to the governor and gave Martines a dressing down. Unfortunately, the *tenente* is a cousin of the *gobernador* at Manaos and has also sent

him a wireless message. The fiscal thinks you might have to go home to save face if he removes the *tenente*."

"Goshamighty! If I'm to be the goat I wish I'd plugged the so-and-so." Bill glanced toward the trunk which contained Sally's picture. Home! On the trunk lay a thick pile of foreman's daily reports. The last one recorded the fact that the work train had that day made twenty-two trips. He saw the coveted job fading away and his blue eyes grew bleak. "Read these reports," he said roughly.

King John did. "Eight more trips, eh?"

"Sure, I used my bean like you said. Dammit, boss, I counted on working here another year—at foreman's pay too. A hell of a shake I'm getting for helping you to build this railroad."

"I'll do what I can," said King John.

BAD NEWS came the next day, Wednesday, when King John telephoned Bill from Porto Velho. "The fiscal hasn't received an answer from the governor and he isn't hopeful. He says you'd better go down the river next Monday before the *tenente* kicks up a ruckus."

It was drizzling that same night when No. 8 followed the work train to camp and onto a temporary side track. Eddie Lucas seemed ill at ease for all his cheerful greeting to the man waiting soggily in the gloom. "Hi-ya, Bill, Old Hoss! Been dodging any more bullets lately?"

Jeff guffawed, and Bill felt his ears reddening. "Ain't been none to dodge, so what you laughing at, Grease-ball?"

"Is this the one, Eddie?" Jeff held up his lantern for a closer look at the construction man. "The jasper who passed the bullets twice? Once when they passed him and—"

"Blah!" Bill glared at his rival. "Old Man Noah kicked the slats out of his cradle when that joke was first sprung. It's all right for a dumb hoghead to sit on his tail and work a couple of levers. He's safe as hell with nothing to do but let his old teapot inch into camp an hour late."

"You telling me I'm late?" Jeff demanded. "You call it safe running over this crazy track? Cripes, I could close my eyes and build a better railroad with a roll of wire."

"Ah, cut it out, fellers." Eddie seized Bill's arm just in time. "I want to tell you something, Bill. Come along while I trim my fire."

Wearing a grin of triumph, Jeff headed for the shack reserved for trainmen. Now that Bill thought of it, Jeff had always grinned in triumph. He was strong and tough and he'd just as soon fight as eat. Bill had never locked horns with him, but the time when he would was now not far off. And it was going to be a real pleasure. Whether it was Eddie's manner, or just a plain hunch that he was in for some really bad news, Bill climbed into the engine cab with his heart beating faster.

"Jeff's a regular feller, Bill," Eddie began. "So are you. You've both got nerve and brains—"

"Why don't you spill it, Eddie?"

"Guess I better. I know Sally thinks a heap of Jeff, and that she don't figger to live 'round no construction jobs. I hate—well, Jeff got a letter— She aims to marry him, I reckon."

"Thanks for comin' out with it. I reckon I ain't much, nohow, for a girl like her. Well . . ." Bill's voice trailed off at the misery he read on Eddie's face. His own cheeks and lips felt as if they had frozen.

Eddie kept staring at the red coals during a silence broken only by the hiss of steam. His profile looked so much like Sally's that Bill stood up when things began to seem blurred. He dropped down onto the ground, and Eddie called, "When you leavin'?"

"Sunday." Bill did not look up and his voice sounded muffled. "I'd sort of aimed to call at the Lazy L but I reckon not now. You can explain."

"You comin' back here or you gunna punch cows again?"

"Neither. I'm fired. Like your old man fired me. Your grandpa, I mean.

But I'm stickin' to construction. My next job 'll be in China, or Africa; maybe, hell. S'long."

"Damn it, Bill, Gramps got over bein' mad at you. He allowed it wasn't your fault about them cows."

Bill heard but he stumbled on in the darkness.

Tight-lipped, he really drove his job the remainder of that week. He'd finish with a bang, go out having at least earned that foreman's job. But on Friday when a trainload of ballast appeared, he found himself in a quandary. The clay fill was now finished up to track subgrade level but the incessant rains had turned the red stuff into something between a ridge of sponges and thick soup. Engines could not safely run over it till the fill had settled.

Had he been older he might have telephoned King John that the timber caps and stringers should not be taken up yet. Badly as he wanted to wind up all his job, he decided to leave the trestle alone. Some one else would have to take out the timbers and put down the ballast. Then came a solution: Engines could not safely run over the new fill but ordinary cars could!

Saturday evening saw the job all but done. In the drizzle, the laborers took out the last track jack; the last carload of stone ballast was being tamped under the ties when No. 8's whistle sounded faintly down the jungle-lined right-of-way. The acting foreman had won but he felt no thrill of victory. He couldn't swallow King John's bitter pill. He was being sent out only to save somebody's face. He had done the right thing—well, he could still do so.

He had posted a flagman to stop the engine from crossing, and to make sure the fellow was on the job he snatched up a lantern. Gloom hung over the place, and it seemed especially lonely now that the men had run to climb aboard the work train. His long legs cast longer shadows as he strode over the top of the high fill. Bare tree trunks loomed up like tall gaunt ghosts against the blackness of the dripping forest. Far below, the creek caught a bit of reflected light and sent back a spot of silver. The headlight of No. 8.

BRAKES groaned, then engineer and fireman swung down. It wasn't Jeff's day to run, yet he came up, watch in hand, his yellow slicker flapping about his long legs. "What in hell's the matter this time, Mud-Rassler?" he barked.

"Nothing, Grease-Ball. Just back up to the siding at Camp 36 and put your teapot on the back end—"

"I thought you sweet-scented gents wanted construction material so bad."

"Nobody could guess it from the way you bring it out. A week makes no difference to you jaspers." Bill went on to explain while Jeff glowered at him. "I've taken the caps and stringers off the old trestle, and the ties will bog down in this new fill. An engine would tip over, and, *hombre,* it's a long way to the bottom."

"It can't be any worse than the rest of this streak of rust. What's a little tilting? I'd feel funny riding level."

"You're funny, anyhow. Go on back like I tell you, thick-head. By the time you get back we'll be ready. It's safe enough for cars and Dode will back up and haul your drag into camp. You leave your engine on this side and I'll put a watchman—"

"Leave an engine on the main line? Say, who you think you are telling a railroader where to head in?" He turned to his young fireman. "Eddie, you ride the pilot and watch things while I take 'r across slow."

"Damn' if I will," Eddie said. "If you've got the nerve to drive across I reckon I can stick in the cab. A hell of a tallowpot I'd be."

Bill hid a grin and wisely kept silent while the engineer wavered. This kid was the apple of Sally's eye, and probably Jeff had promised to look out for him; otherwise, Jeff wouldn't hesitate.

Suddenly, Jeff snorted and turned to his fireboy. "Sure, ride in the cab. We'll show these mud-hounds what honest-to-

gosh rails can do, even in this country." Jeff jerked down his cap and stalked off with Eddie trailing behind. "But you jump if I yell—"

Swearing, Bill swung his lantern signalling Dode to back up the work train and block the line. He waited for the return signal, thought he caught the rear brakeman's answer, and raced back toward No. 8. "That will stop Jeff's clock," he said to himself. "Have to hang him up a minute, though." He had just mounted the cab irons when Dode tooted —twice, for a go-ahead!

"What you want now, Mud-Hound," Jeff roared when Bill ripped out a cuss word.

"Listen, Jeff. Maybe what I said didn't get into your skull. That track may look all right but it ain't. A few more days and that clay will settle solid. But no engine's been on it yet and I'm scared to have one go on it."

"Sure. You ain't a railroader."

"Okay, be a long-eared jackass. Kill yourself and lose an engine, but at least make Eddie get in the clear."

"I'm stickin'," Eddie said.

"Hear that? Dammit, Jeff, look around. This would be a hell of a place to die."

Jeff did, as if he had thought of that possibility before. The train, the mud, the dangerous track ahead, the brooding black silence of the jungle got to him. His hand shook on the throttle and when he saw Bill looking at that sign of fear, rage caught him.

"You trying to get my goat, Ashley?" he shouted. "'Keep 'em running,' King John said. All right, he's on the back end, and I'm pulling this drag across to report in. So get to hell out of this cab—or stay if you've got the guts."

"It ain't guts this time, it's brains." Bill stepped down still hoping to get a signal to Dode, for they had learned that the native brakemen were likely to get their signals mixed.

He slipped on the greasy subgrade and barely missed falling against the drivers

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already spinning on the wet rails. The jerk put out his light. He scrambled to his feet, cursed and flung the lantern from him. The work train had pulled out for camp!

Swearing as he ran, he got ahead of the engine. In the glare of the headlight he looked for a loose tie, a track jack, anything to stop that engine. There was nothing. His own order to clean up the job brought defeat. His blood chilled as he looked back.

The man at the throttle fed steam slowly, but the mass of black steel now at the beginning of the fill tilted badly. And when it should come over the deeper fill—Bill groaned as he watched. Jeff's face looked like gray parchment. Then the hoghead turned and spoke to his fireman. Eddie disappeared, then came again into Bill's view, clutching the iron grips as he leaned far out peering into the lighted stretch ahead.

Puffs came faster from the stack. Bill drew in a quick breath when mud squirted out at the ends of the loaded ties. So far, settlement was equal on both rails but he knew it wouldn't take much of a side thrust on a sixty-five pound rail to turn it over. Then he let out a strangled yell.

The left-hand side began sinking faster than the right.

Slowly, steadily, the compacting earth went down. Farther, farther, till it seemed incredible that that ponderous mass could stay upright. Too late, Jeff shut off steam. Eddie's feet had slipped off the slanting steel gangway. His legs dangled as he clung to the rods.

Bill watched, his heart in his throat, while Eddie fought to claw his way back. It was all too plain what would happen if he failed to get to the opposite side before the engine toppled over. If not crushed he'd be buried in muck and scalded to a slow death by live steam.

"Jump, Eddie! Jump!" Bill yelled, and so did Jeff.

Eddie let out a cry and leaped out into the darkness. He landed far down the slope, a deeper blotch in the night. Unable to see clearly, Bill wondered if the lad would know enough to run forward out of the way. To get out of the glare of the headlight, he darted to one side, peered down and gave a yell.

Eddie wasn't moving at all. In the soft fresh earth, his legs had sunk in above the knees, head and body downward. He flailed both arms trying to free himself, but the wet clay was too slippery for him to get a purchase. He was stuck.

Bill shivered as he glanced at the engine. Jeff was not in sight. He had probably jumped to safety on the far side, and for a fleeting moment Bill wavered. Death awaited any one in the path of that black monster which seemed to be tilting more with each precious second.

"I'm stuck, Bill!" In that terrified wail, Bill heard a familiar timbre. Sally's brother had called to him—Bill.

He noticed the spinning drivers as he floundered past the pilot wheels but he gave a curse for all hogheads and made a running jump. He landed on his pants, skidding downward. He had counted on that, but the wet clay was slipperier than he had expected. In dread of feeling that crushing juggernaut, he rolled desperately. Somehow, he must catch Eddie.

In a last wriggle as he was skidding past, he caught Eddie's jumper and dug in his toes. In a jiffy he had Eddie's legs free. Only seconds had passed since Eddie's leap but Bill dared not look up as they slogged their way diagonally forward and downward in wild flight. They brought up in a tangle of brush and vines. Then, panting for breath, they wormed their way up the slippery bank.

ASTONISHINGLY, the engine was still upright when they reached the track. Lights winked along the train as conductor, shack and passengers floundered forward. Only then did Bill realize he had been hearing the screech of drivers and staccato puffs. Jeff had backed onto solid ground!

Swearing feebly, Bill laid a hand on one rail. It had been roughened by bits of stone ballast, enough for the drivers to grip and let Jeff back out of that sag in

Eddie's feet had slipped off the slanting steel gangway. His legs dangled as he clung to the steel rods

the track. That had taken a man of cool nerve who knew his stuff. Jeff had saved his engine and Sally's brother and, yes, his rival.

"I admit Jeff's got guts," Bill exclaimed in awed wonder. "We'd have been goners if he hadn't stayed with his engine."

"Bill? Bill!" Eddie seized Bill's arm in a fierce grip. "I have to tell you something. I gotta."

"What's eating on you, Eddie?"

"Listen, then boot me back down that bank. Bill, I thought running an engine was the greatest thing on earth. I just naturally cottoned to 'em. I used to go into the roundhouse every time I went to town. That's how I got acquainted with Jeff. He told me all about engines and railroading and, well, I thought he was the swellest, nerviest jasper who ever ran down a pike."

"He's nervy, anyhow," Bill admitted.

"He ain't deuce-high to you," Eddie almost sobbed. "You risked your own neck to save my hide—it's the same thing because you didn't know that engine wasn't going to tip over. Wait! Bill, I

did you the dirtiest trick a man could do."

"Shucks, Eddie, no sense talkin' like that." Bill knew Eddie hadn't reached eighteen and remembered the lad had lied about his age to get a job there. The rounded chin began trembling, and Bill turned away. It reminded him of the time Sally had cried over a calf with a broken leg. He said gruffly: "Buck up, feller. Jeff and some others are coming."

"I have to finish while I got my nerve. I ain't saying it's Jeff's fault telling you Sally aimed to marry him. She never wrote me she wouldn't marry you."

"But she didn't answer my letter. I explained why I wanted to follow construction and asked her to marry me."

"She answered, Bill, but I—"

"Keep 'em running, hey!" Jeff came up and poked his fist under Bill's nose. "And this is the roadbed I got to do it on."

Bill stood watching Eddie groping under his jumper. "Ah, go oil your slide-valves. I told you to back up—"

POW! The Ashley chin had stuck out too far for a fiery-tempered hoghead to resist. Staggering back, Bill grabbed at a flock of stars and went down. His head struck a rail with a thud he couldn't hear.

The fog cleared when Jeff began speaking. "No, I didn't see Bill down there. Eddie jumped and I knew I had to back out. If it hadn't been for the ballast on the rails, I'd never have made it."

"What the hell!" Bill scrambled to his feet, glaring at Jeff, then at King John. "There's your job. Done. Hope you like it and to hell with both of you!" His chin came out again as he turned to the hoghead. "Put 'em up, Grease-Ball! I'm going home tomorrow but you get a lickin' first."

"Going home? I thought—"

"Pipe down, Bill." King John smiled as he stepped between the two men. "You're not going home unless you want to. The governor is taking *Tenente* Martines out of here. I sent a wireless message myself telling the governor I can't spare one of my best men. Well, I came up to help you open Camp 42 next Monday."

Eddie nudged the new foreman away from the group before Bill could commit himself. "This came two days ago," Eddie said, holding out a smudged letter. "I grabbed it for you at the port, knowing it's important. I've been feeling terrible since —gosh, read it. Your year contract's up. You can do what you want."

"Yeah, I can." Bill looked at King John waiting with amazing patience, then at the dripping dark jungle. Somehow, the place didn't seem so bad. A lot of swell guys worked along that jungle pike—doing a big job and not bragging about it. A foreman? Gosh, a camp foreman was practically a king! "I'll read it after supper, Eddie," he said.

"I got one in the mail too, and she wondered if our wireless is working."

Bill promptly tore open his letter. "Darling Bill," he read. Yes, she'd marry him. After the marvel of that, his eyes jumped downward like scared rabbits. ". . . so glad you explained. . . . We're all so proud . . . It's you I want . . . you must work at whatever you'll be happiest—"

King John spoke to Jeff. "Back up to Camp 36, then shove your cars up here for the work train to haul across this fill." To Bill, he said, "Some trouble?"

"Not exactly trouble. I'd like to have that foreman's job but I aim to go home and get married."

Jeff swore on a high note and stalked away.

King John laughed then wiped his eyes. "I've heard married life is all right, Bill. In fact, several of the boys are keeping their wives in Manaos. So, go ahead, take your vacation."

"It's a deal." Bill looked toward No. 8, let out a long breath and darted away to catch up with the hoghead.

Somehow, Jeff Wright managed a ghastly grin. His hand came out. "You ornery mud-rassler, I'm glad you're coming back to a foreman's job. You earned it. It didn't just happen. King John knows it takes honest-to-gosh railroaders to build tracks through this lousy country."

"And run the trains," Bill added. "Did he hang a pink ticket on you? Hell, no."

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ON THE SPOT

Our Readers Talk It Over With the Editorial Crew

POPULAR SONG, "Have I Been Away Too Long?" applies to Engineer Ben Gadley, who wanted to take the Cotton Belt passenger run from Jonesboro to Birds Point, Ark., but H. J. Kalkbrenner, mechanical foreman in charge of the Jonesboro roundhouse, had to turn him down. There hasn't been any passenger run to Birds Point for 30 years.

Ben didn't know that when he walked into the roundhouse. He presented an engineer's card showing he had been given a leave of absence in November 1900. He hadn't been back to Jonesboro since.

San Francisco Maritime & Railroad Museum, open on trial basis, may house historic Western rail equipment if public interest warrants. *J. W. Bowker*, former V&T loco, hauled SF Municipal Band at inauguration of ex-Haslett Warehouse

"But they told me to come back any time," he said to the foreman, "so mark me up on the board."

Ben is 91 years old.

* * *

ABANDONMENTS. Old No. 67, the one-train-each-day on a Baltimore & Ohio branch line to Perry, N. Y., went out in style the other day, with 68 paying passengers on the graveyard trip. B&O brasshats say it was the first time in a decade that the 57-mile run made a profit.

The Tennessee & North Carolina, which until recently operated 25 miles in North Carolina between Hayesville and Andrews, freight only, is now abandoned, reports Stanley D. Crews of 202 North Main Street, Crossville, Tenn.

Conductor John W. Kelly waved a last fond farewell to train No. 45 of the Washington & Old Dominion as she left Rosslyn, Va., on her final trip. The aging conductor was too ill to stay with his train to the end. Seventy cash customers rode that day. The train was pulled out of service because the Post Office Department has found a cheaper way to handle mail between Washington and Purcellville, Va.

* * *

MAIL BY RAIL. The railroads receive an average of only 15 cents for hauling a ton of first-class mail, according to Dr. Julius H. Parmelee, a vice president of the Association of American Railroads, refuting airline statements that the roads get more than 45 cents for this service. For all classes of mail handled, Parmelee points out, the railroads are paid only about 8.6 cents per mile.

* * *

A DENTIST'S office on wheels—a converted sleeping car—with close to $100,000 in modern equipment, is now traveling the Canadian National lines in northern Ontario, providing free dental care to school children in isolated areas. Ontario's Department of Health finances it. In charge of the car is Dr. A. D. McLean, with his wife as dental assistant.

* * *

QUICK action by Boris Pando, Nickel Plate section foreman, is credited with saving the life of a track laborer,

FIDDLETOWN & COPPEROPOLIS RY.

No. 40 F & C Does Honor—If Not Justice—To Thanksgiving With Turkey Hunt Near Gunsight Pass *by Carl Fallberg*

Albert Liskowski, who was knocked out by lightning when the crew was working on the Nickel Plate bridge at Rocky River, Ohio. The foreman placed the man on a motorcar and rushed him to the nearby Rocky River station. There he laid the unconscious gandy dancer on the floor and administered artificial respiration until a doctor and the local fire department arrived about 30 minutes later. Then Liskowski was taken to a hospital, where he recovered inside of a week. The attending doctor said that if artificial respiration had not been given promptly the man would have died.

* * *

A B&O section crew played a dramatic part in the rescue of an aged woman trapped beneath a huge rock which had rolled down a hillside and crashed into her home. While Section Foreman C. W. Rainey and three trackmen were passing Tesage, W. Va., on their motorcar they heard moans coming from a nearby small house. They found Miss Bessie Christy, 60, pinned in her bed by the boulder, which weighed about 5 tons. She had been trapped for almost 12 hours. Using jacks, they lifted the rock enough to release Miss Christy. Then she was taken to a hospital.

Shortly afterward, an alert B&O train crew on No. 11 noticed that the house owned by Matilda Moran at Aurora, Ind., was on fire. They gave the alarm and are credited with having saved the lives of two families.

* * *

JAPAN definitely is a railfan's paradise, reports H. F. Thompson of 2261 Sunny Vista Drive, San Jose, Calif., who explains: "I was serving aboard the Navy transport *Gen. Edwin D. Patrick* as chief storekeeper and seeing quite a bit of the world. Japan's electric trains are really something to see and ride. Those people do a good job of railroading."

A member of a Railway Transportation Operating Battalion: 1st Sgt. Matthew L. Werner Jr., 20317654, Hq. Co., 712th TROB, APO 301, c/o Postmaster, San Francisco, Calif., writes from Korea:

"We have operators in the important railway traffic offices and we use our own dispatchers, but from there on the actual operations are left to the Korean National Railways. The Korean railway employe is quite a person and is looked up to by all his people, possibly because he is a link with the outside world.

"Almost everything here has to move via the high iron. The highways are backbreakers, narrow and winding. Sometimes two lines of vehicles try to pass one another where they can't. You can see trucks lying halfway down the sides of dangerous hills and passes all over the country.

"Korean railway operation is similar to American. Trains run on opposite track, however, and use the positive block system instead of the automatic wayside signal. This causes delays. They run like mad at night, without headlights, because of native custom and wartime necessity. It would seem that a headlight is urgent, what with the constant burning or blowing up of bridges, removal of rails and loosening of angle bars by Reds living behind the lines. Most of the rolling stock is built in Japan.

"I carry a paid-up membership card in the Order of Railroad Telegraphers and hope soon to return to my old job in the States."

* * *

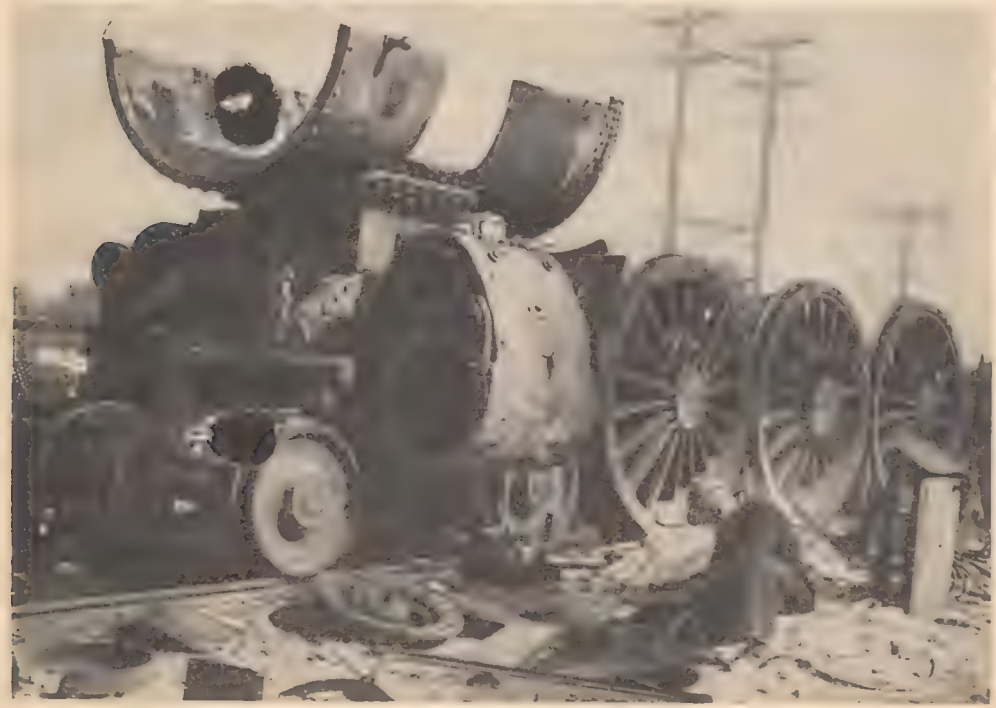
HERO. William J. Eichler of Route 4, Box 77, Ocala, Fla., sends us a copy of the official citation of his son, Pfc. William R. Eichler, but says he can't understand where the boy picked up his knowledge of locomotives, as he was only 17 when the action took place, July 20, 1950, at Taejon, Korea.

"Prior to the evacuation of Taejon," the citation reads, "the train carrying the regimental ammunition began receiving heavy machine-gun fire. Pvt. Eichler and a companion voluntarily manned a .50 caliber machine-gun with which they de-

FOR DEFENSE

Railroads are chief source of high grade scrap for defense, especially with so many steam locomotives being replaced by Diesels. Just what one road has done in six years makes you stop and whistle while bowing to Union Pacific, which has turned back nearly a million gross tons of iron and steel. *Left*, coal car being cut up at Cheyenne, Wyoming is one of 17,427 freights that will be fed to hungry mills and foundries. *Below*, UP dismembers 578th locomotive since August 14, 1945 at Pocatello, Idaho

Union Pacific



livered such effective fire that the enemy was unable to deliver aimed fire on the train.

"When the city was to be evacuated, it was discovered that the engineer assigned to the train was missing. Pvt. Eichler, having some knowledge of locomotives, attempted to build up enough steam and move the train. When this effort proved futile, it was discovered that the engine had been sabotaged. Pvt. Eichler procured another locomotive and an engineer. He acted as fireman.

"After moving some ten miles out of the city, the train ran into an ambush. Disregarding the fire that was directed at the locomotive, Pvt. Eichler continued to work at top speed as fireman. He succeeded in keeping enough steam to enable the train to move through the heavy enemy fire. By his heroic acts, Pvt. Eichler enabled this train to leave beleaguered Taejon and to save the lives of those who were on it."

* * *

CANADIAN railway equipment, on the average, costs about 35 percent more than similar equipment in the States, reports W. A. Newman, Canadian Pacific chief of motive power and rolling stock. The difference arises from the fact that material prices in Canada are higher and there is a 10 percent sales tax on all Canadian equipment.

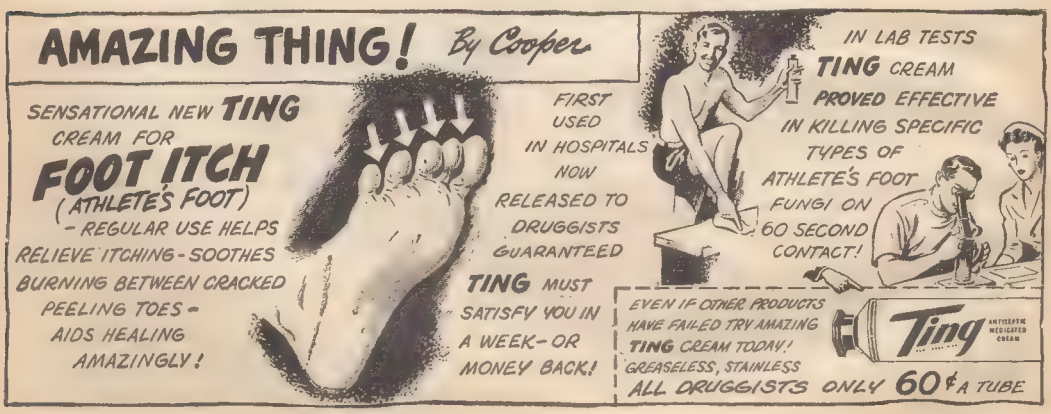
DEBUNKING the tradition that Curtis Gandy Jr. gave the Atchison, Topeka & Santa Fe its name, Stephen G. Rich of Box B, Verona, N. J., claims that the AT&SF was chartered under that name by the Kansas Legislature in 1859, citing as his authority the *Encyclopaedia Britannica*. However, the Random House book *Santa Fe*, by James Marshall, makes it clear that the road's original name was Atchison & Topeka; and the "Santa Fe" was not added until November 24, 1863. Gandy was *not* the man who added it.

* * *

GAGES. *Information Booth* had stated, "It was in the spring of '86 that every roadbed in Dixieland was changed to standard gage," but Paul F. Laning of 1100 Campbell Street, Sandusky, Ohio, cites the October 1905 *Official Guide* as listing 8 railroads in the South with a gage of 4 feet 9 inches and two others, the Seaboard and the ACL, as boasting both 4 feet 9 and 4 feet 8½, while the ACL also had some 3-foot gage.

"It seems," he continues, "that some time between 1900 and 1905 several Southern roads converted from 4 feet 8½ to 4 feet 9, and during the same period a few Northern roads changed from 4 feet 9 to 4 feet 8½."

Despite those half-inch variations, standard-gage engines and cars were used in each case.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McKEEN RAILCAR. "I thought you'd like to learn the fate of a McKeen railcar pictured in William M. Schopp's article, 'Born Thirty Years Too Soon' sometime ago," writes Al DuHadway of the Police Department Record Bureau, Ecorse 29, Mich. "I refer to the last one with its original drive. According to the author, it was in the Wier Bros. junkyard at Sandusky, Ohio. The other day, while driving down highway Route 2 near Bono, Ohio, I came across this car, miles away from a railroad, still bearing the name 'Lakeside & Marblehead' but without its running gear. It probably will be used as a roadside diner."

Al's father, Ed DuHadway, was a boomer engineer for many years. He hit all 48 states, plus Canada, Cuba, Alaska and Mexico.

Items on these McKeen cars turn up in the *Spot* editor's letterbox from time to time, setting some sort of record for article longevity. We'll keep you posted on any developments that seem interesting.

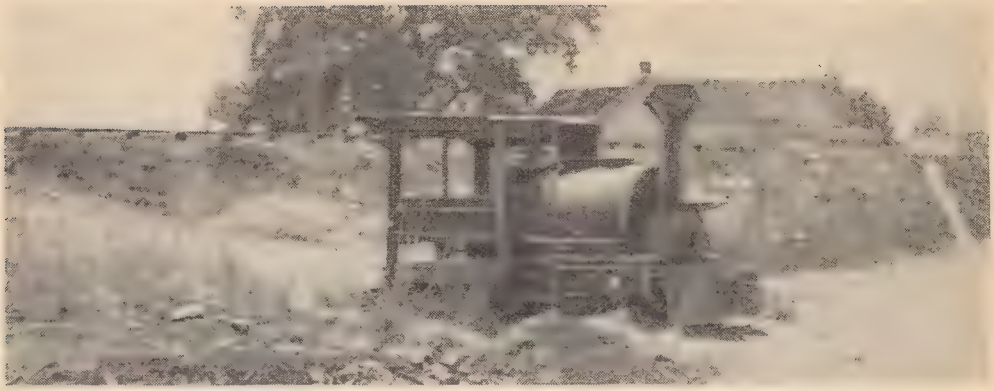
NARROW-GAGE fans may be interested in a project put forth by Hal Wilmunder, former SP fireman, of 2179 Seventh Avenue, Sacramento, Calif., who writes: "In 1948 I bought at scrap price a Porter saddle-tank locomotive, No. 1018, built in 1889, from the Sacramento Brick Company and have since spent most of my spare time rebuilding her. As the work progressed my enthusiasm grew. One day I purchased another engine, a pretty little 10-wheeler, Baldwin-built in 1920, with 43-inch driving wheels.

Scott McCormick

Prairie steam. It's a 35-horsepower Reeves engine with Aultman-Taylor separator near Princeton, Wisconsin

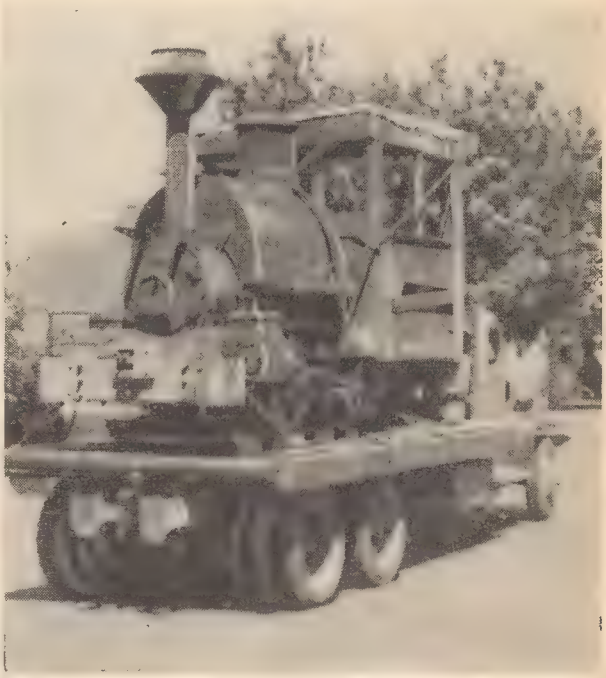
"Various clubs have preserved narrow-gage locomotives, but where can you find one that can still work steam? I have in mind building an operating museum, a place where railfans can ride old narrow-gagers, merely as a hobby, not as a money-making business. My two engines burn wood. Second-hand ties are plentiful; local railroads would give us a fuel supply for the asking. For awhile I wondered, 'What more could I ask!' but then something happened.

"Last December I was involved in an auto accident, and could no longer pay locomotive storage or moving fees. I am



HELP WANTED

Sailor Hal Wilmunder of Sacramento, ex-Southern Pacific fireman, has been described by dispatcher out west as "the most rabid railfan I've ever run into." Wilmunder wants to build narrow-gage railroad as hobby, where railfans can ride old wood-burners, and he has bought a Porter saddle-tank loco and a small *Ten-Wheeler* while a lumber company has donated a *Shay* and several cars. Right now he is having storage trouble. Any help?



now in the Navy. It is necessary that I have one engine stored until I get out of the Navy and begin work on the projected museum. Unless I can pay storage I'll have to let the engine be junked."

A friend of ours, a train dispatcher on a big western road, checked up on this matter and reports: "Hal Wilmunder is a fellow between 25 and 30, the most rabid railfan I've ever run into. The saddle-tank engine referred to could be restored to serviceable condition, but I can't un-

Photos by Ken Roosa

Henry Eghmey felt like traitor to steam such as old *Ten-Wheeler* 805, *below*, when he rode in cab of Diesel 8105, *above*, on the Wallkill in death knell of New York Central steam there

derstand anyone undertaking the job single-handed. He is attempting to do the work piecemeal, paying for it out of his own pocket.

"You can't imagine the collection of stuff he has without seeing it, and he seems to have a good working knowledge of what he is trying to do. He has selected a place to build the proposed museum railroad and contracted for the rail. He has bought the other engine he mentions. A lumber company has donated him a *Shay* and several cars.

"I am not a railfan to the extent of understanding Hal's desire to build and maintain an operating narrow-gage railroad at a continual expense to himself. However, he seems to have no idea of commercializing it in any way. Perhaps railfans will support the project. Offhand, I'd say that, given the money, he will get the job done. Such enthusiasm is a new experience to me. Hal is a member of the Railway & Locomotive Historical Society."

* * *

A SNOWSTORM lashing the New York Central's North Yards at Kingston, N. Y., fouled up the switches and kept the new RV-5 Diesel 8105, with a 26-car freight train, from leaving on its scheduled time, 4 a.m. Riding the cab with Engineer Joe Branigan and Fireman Frank Moone was a non-railroader, Henry P. Eighmey of 94 Highland Avenue, Kingston, who felt like a renegade because he was riding a type of motive power he disliked.

"Can you imagine me, a steam fan," he asks, "arising at 3 a.m. and driving a couple of miles through a snowstorm to ride the cab of a contraption that's sounding the death knell of the steam engine—and signing my life away to do it, too? Maybe Nature was giving her parting blessing to the little old *Ten-Wheelers* on the Central's Wallkill Valley branch by showing the new Diesel there's something better than her, even if only a snowstorm."

At 7:35 a.m. the contraption finally left on her maiden run to Campbell Hall, about 30 miles distant. Conductor Dan Cahill swung a highball from the caboose,

Bob White

You've heard of Railroad Avenue. Now a Grand Trunk Western section foreman comes up with proof of Railroad Street, in Ionia, Michigan on GTW&PM. Immediately, Freeman Hubbard, author of *Railroad Avenue*, asks: "What other towns have Railroad Streets?"

Brakeman E. H. Dillon opened the gate, and Brakeman Stan Horn closed it and caught the crummy as she glided by on snow-muffled rails.

"Yellow on top!" shouted the tallow-pot. Repeating the words, Branigan widened the throttle and they clicked through the switch to the depot to pick up orders which read. "Extra eastbound, Eng. 8105 . . ."

Ben Turck, the road foreman of engines, loaned Eighmey his *Engineman's Manual.* From that the steam fan found he was riding a 1000-hp. road switcher that weighed 120 tons on her drivers, had a maximum speed of 60 mph., had four motors and one generator, 40-inch wheels, and a gear ratio of 75:16.

"We crossed Broadway, Kingston's main drag," Eighmey relates, "with me recalling the 30-year fight to have that grade crossing eliminated. The exhaust quickened as those 1000 horses settled into their harness and the drumming under the steel hood was a prediction of things to come, Diesels on the Wallkill.

"Our Diesel's black and gray body nosed around curve after curve of the single-tracked branch lined with snow-laden evergreen trees, picturesque rock croppings and white hills sparsely dotted with houses. We crept out on the lofty steel trestle at Rosendale—the town which still boasts of having supplied cement for the erection of Brooklyn Bridge in 1883—making 5 mph. because of a slow order based on the age of the highest trestle in these parts.

"It would be a long drop if something should go amiss on Rosendale trestle; but we kept rolling safely over the line which, despite its magnificent scenery, is now used for freight only. Fireman Moone said our first stop would be Montgomery, where the Central's track ends and Erie branch trackage rights begin.

"Branigan opened her up till the speed indicator showed 40. I stood all the way so I could see better, while the road foreman, between periodic checkups of gadgets in the cab, poured more data into my ears than I could digest in a week. Through New Paltz and Gardner we rolled, with Branigan parroting Fireman Moone's 'Clear board!' Our engineer waved a greeting to an ancient *Ten-Wheeler* on a siding.

"Those *Ten-Wheelers* had challenged Catskill Mountains grades down through the years on the former Ulster & Delaware (now NYC, Catskill Mountain Branch) and had not been found wanting. But the years of pounding up heavy grades had torn out their hearts and now the gallant little engines, burnishing steel on the Wallkill Valley, were on their way to the scrap heap, with a Diesel nudging them into oblivion.

"We neared the village of Wallkill with a slow order over a bad grade crossing. There was good reason to be cautious. Further on, in a field lay a rusting, twisted pile of metal, now snow-covered, that had once been hopper cars loaded with coal.

Certainly worth crowing about is Nickel Plate shot of busy Bellevue, O. roundhouse, lantern silhouetting workers alongside tender of *Pacific* 168

Courtesy BLF&E Magazine

One crisp night those cars had jumped a broken rail, ditching nine loads of black diamonds.

"'They'll be salvaged come better weather,' the River Division trainmaster told me.

"Walden, a small manufacturing town, passed as the words 'Clear board!' again traversed the cab's width and back. We paused at Montgomery for clearance over the Erie's branch. Falling snow turned to a drizzle as we pulled up at Campbell Hall, a dreary spot with not a soul in sight. You could see the dilapidated old depot still flaunting its ornate gingerbread of better years, and strings of freight cars, snow-streaked tracks and a couple of houses. All it lacked was black crepe to make a perfect picture of mourning for the demise of the steam engine.

"On the return trip to Kingston, with 18 loads and a caboose, we passed No.

101, the New York, Ontario & Western's only passenger train—a pathetic string of varnish that formerly hauled gay multitudes of vacationists up into the green hills of Sullivan County in the days before the bus and automobile began cutting in. Today the 101 consisted of a *Mountain* type steam engine with pounding side rods, a paint-peeled baggage car, a mail car and one old coach.

"Something else was bowing out: an entire railroad in the throes of receivership, struggling to keep alive. A line of rotting ties under the snow paralleling the single track was mute evidence of the once-busy, once double-tracked NYO&W that had torn up one set of rails as an economy move. The blast of the neglected *Mountain* type's whistle when she rumbled away from Campbell Hall depot was another sad tune from the past—answered by the growl of our Diesel's airhorn as a symbol of the future."

* * *

TEXAS & PACIFIC will be completely Dieselized by next April, including passenger, freight and yard service, the board of directors has decided. This would make T&P one of the few major roads with fully Dieselized train operations. First was the Gulf, Mobile & Ohio.

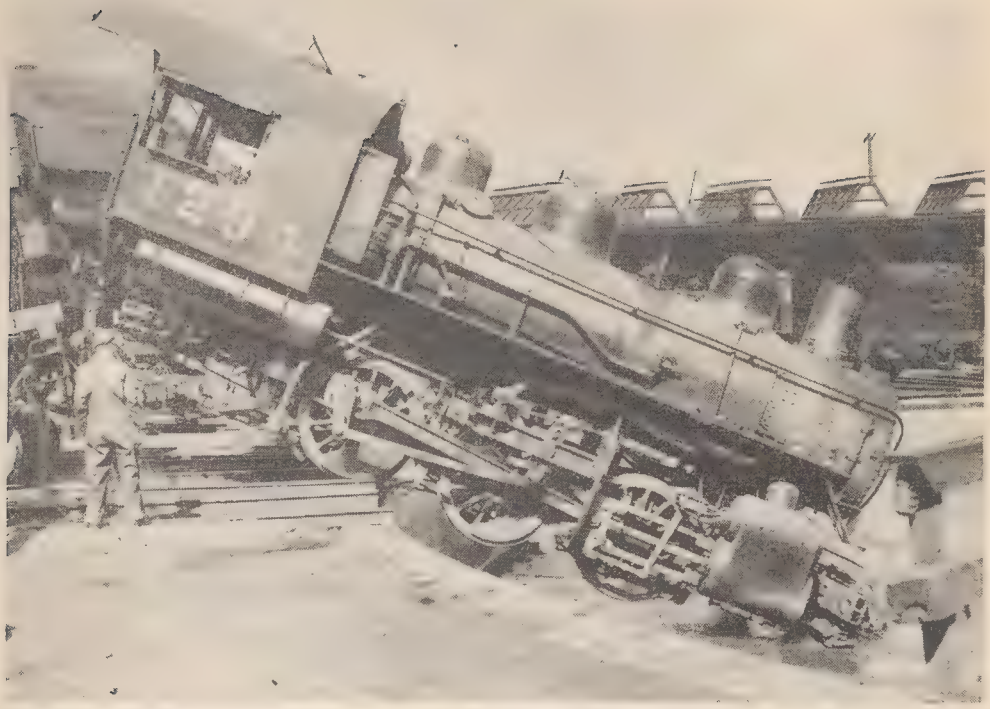
LAST STOP is the Reader's Choice Coupon (page 132) which guides your editorial crew in selecting material for future issues of *Railroad Magazine*. Some readers use the coupon. Others prefer not to clip the magazine; they send home-made coupons, postcards or letters. Regardless of how votes are given, all count the same. Results of balloting on the October issue show as follows:

1. Rocketing Rock Island, *Draper*
2. Upgrade to Ararat, *Pennypacker & Elston*
3. On the Spot
4. Light of the Lantern
5. Land Grant Legend, *Gross*
   Locomotives of Bessemer & Lake Erie
6. Electric Lines, *Maguire*
7. Boomer, Don't Lie, *Morgan*
   Railroad Camera Club
8. Stop! Look! Listen!, *Bradley*

Best photos: pages 66, 40-41, 25

In story beginning at *right*, D. L. Joslyn mentions difficulty of taking new Sacramento station progress shots, from tower atop ten-story Fruit Building, *below*. *Above, right:* SP motive power superintendent ordered photog to take shot of *6-Wheel* Switcher, got more than he bargained for. *Right, below:* Hard work rather than luck got 13 cab-in-fronters lined up for this favorite shot

D. L. Joslyn



Railroad Camera Club

SHOP PHOTOGRAPHER

D. L. JOSLYN

WHAT has the railroad shop photographer to do with the running of trains? Plenty. All new equipment, shop tools and machines, broken or defective parts, new ideas applied to equipment, everything along these lines has to be

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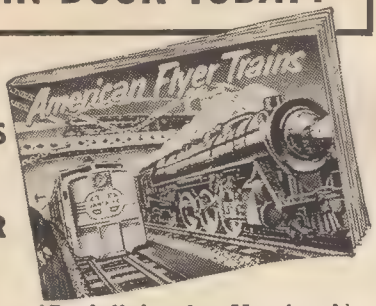

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***Railroad Magazine*, 205 East 42nd Street, New York City 17.**

photographed so the management can see, by story-telling pictures, just what is going on. When an accident occurs, and unfortunately they will now and then, a series of pictures has to be taken at once to show just how it happened. The ICC receives some of these, the State Accident Commission gets others and the railroad, of course, keeps many on record. On the brighter side, the photographer is in constant demand from the news bureau, and the shop men. Picnics, sports, retirements, shop meetings, all demand attention.

I joined the Southern Pacific at Sacramento in August 1902 as a boilermaker apprentice, served my time, then built tanks for tenders, worked as piecework inspector, shop clerk and record clerk. As record clerk, I worked in the drafting room, keeping a record of all drawings, issuing blueprints to the shops and keeping track of the prints issued. Drafting appealed to me, so I was soon taking a course in it and in 1916 was given the position of junior draftsman. Shortly after going on the board, the chief gave me the job of shop photographer, which was part of one draftsman's job.

The modern photographer would have a sorry time of it today taking pictures with the equipment then in use. A large, old-fashioned 8x10 view camera on a spindly tripod. There was no shutter on the big 12-inch lens; we took pictures by taking the lens cap off and replacing it. I discarded the tripod pronto for a more rigid one, designed by me in the cabinet shop. There were no films, no ready-mixed photo chemicals; we used Kramer fast dry plates, which were anything but fast but they did give beautiful pictures. Each plate was developed individually in a tray and if there were 10 or 12 plates to develop, it was a long job. Each photographer compounded his own private formula, and guarded it.

A picture indoors where there was not much light was taken with the aid of several sheets of tin placed so the light was reflected on the subject. Or, sometimes, when a fast picture had to be taken, we

used flash powder on a flash pan. The flash pan was about 14 inches long and possibly 3 inches wide. Attached to the under side of the pan, about the middle, was a long handle, with a trigger in the handle. On the pan was a firing pin, under which was a cap such as the kids use in their cap pistols. A cap was inserted, the firing rod locked down in the handle, a small amount of flash powder poured on the pan, and the pan was held overhead. When the pin was released, a spring shot it up, firing the cap and exploding the powder. It was dangerous, but we used it for a number of years.

The locomotive firemen held their grand ball in the city auditorium, and they asked me if I would come up and take a picture for their official journal. Loaded down with several holders, each containing two dry plates, and the big camera, flash pan, powder and tripod, I climbed up into the highest balcony. Looking down onto the dance floor, I decided it would take a big flash, so I poured about three ounces of powder on the pan. Holding the pan high overhead after removing the lens cap, I shouted "All right" and shot. There was a blinding flash, a terrific "Whoom" and shrieks from the women dancers. The flash pan was driven downward from the force of the explosion, my hair was singed and my face was blackened, but I had presence of mind enough to put the cap back on the lens.

In the lobby of the auditorium were two city policemen on regular duty and three railroad police. When that whoom went off with its blinding flash and great cloud of smoke hitting the ceiling, the officers came on the run, some with pistols in hand. All they found was a badly scared photographer. One picture was all I took; yet next day when the plate was developed it was a perfect. But I never used that much powder again.

When a picture of a locomotive was required, it took a little time to line it up. The locomotive had to be placed in good light, all steam leaks from cylinder cocks shut off, smoke from the stack cut down,

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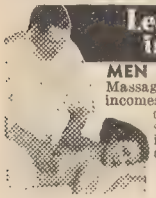

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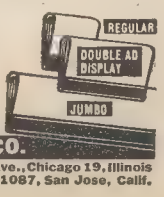

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and locomotive placed with rods on the bottom quarter. All workmen had to be herded away so they would not get into the picture. The boss sent me out to get a picture of a dead engine sitting alongside the fence in the boneyard. There did not appear to be any one around, and I did not take the trouble to call the shop goat to spot the engine. Next day when I placed the prints on the desk of the superintendent of motive power he yelled:

"Hey, I told you to get me a picture of a locomotive, not a man reading the paper!"

Sure enough, back of the locomotive, but where he could be seen between the frame and the boiler, was a man sitting on a box against the fence, reading a paper and smoking his pipe. To make matters worse, the rods were on line with the center of the driving axles, and an electric light pole was apparently growing out of the stack. My face was rather red.

The superintendent of motive power was quite particular about locomotive pictures—no telephone or electric light poles, tops of trees, peaks of buildings, or stacks of stationary boilers in the background. This was almost impossible, as there were all these objects in and around the shops. So, we took our ruling pen, a few camel-hair brushes and some India ink, and blocked out the obstructions when they could not be avoided in taking the picture.

About 1920 we graduated to cut films, which were then appearing on the market. That was a great help, as they were lighter, easier to handle and had greater speed. This made necessary a shutter. The first was one of those rectangular wooden affairs that slipped over the lens and inside was a curtain similar to a Graflex curtain. It was makeshift at best, but popular at the time. It was not long until we had a regular between-the-lens shutter with speeds so slow they would stymie the photographer today with his fast films.

SOMETIMES the photographer got into trouble by not being wise to the rules and agreements of the brotherhoods.

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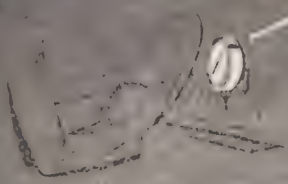

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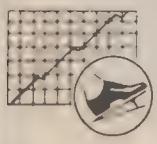

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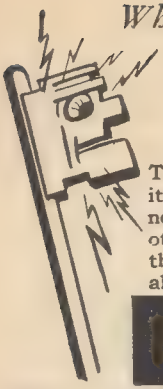

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A picture was wanted of a locomotive that did not come to Sacramento but could he had at Roseville. Only place we could spot the engine in the shop grounds was rather cramped and background was poor. So the hostler suggested we go outside the shop grounds and up by the station where there was a dandy place to get a full side view. The picture was a beauty, but it was a long time before we heard the last of that move.

It seems that the brotherhood agreement called for an engineer, or in this case the hostler, plus a fireman and a switchman to take an engine out of the shop grounds onto the main line. Result: every fireman, engineer and switchman on the extra board claimed a run around and received a day's pay, and the photographer received a sharp letter advising him that such a stunt would not be tolerated again.

On one assignment, several railroad photographers were sent into the foothills. I was to get a picture of a fruit train with the foothill orchards as background. I selected a place on top of a hill, where I had a good view of the tracks below and a curve that swung around out of a tunnel entrance. In the background were the rolling foothills covered with orchards. Getting my big camera set up, I noticed some shrubs along the edge of the hill that would be in the picture. I pulled these out and threw them over the bank. With everything ready, I was about to sit down on a large flat stone to await the train. Something prompted me to give that rock a close look. And there, all ready for business, was a young rattlesnake coiled up. The snake died suddenly, you may be sure.

After I took the picture, I went down to the tracks, where the Mexican track men had a speeder and trailer waiting for me. They were all excited about something and avoided me like I was poison. The boss, an Italian, told me I had poison oak on my hands; those little bushes I had pulled up were poison oak. For some reason, I did not get poisoned and had no ill effects from my contact with the weed,

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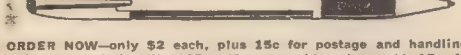

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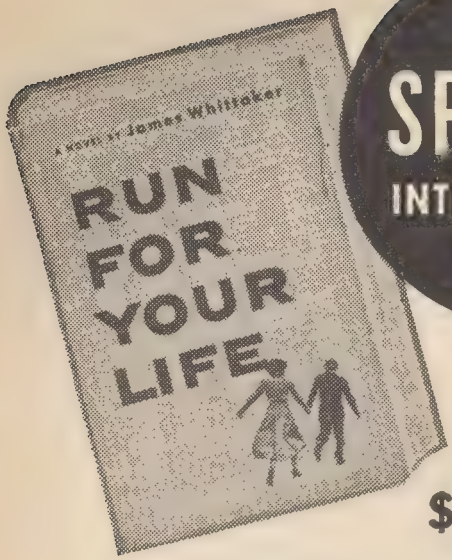
but I tremble to think what might have happened if I had rubbed my eye with that stuff on my hands.

On another assignment, the railroad

Steve Edwards

D. L. Joslyn, *Shop Photographer* himself, with camera that turns out pictures for Espee

wanted a view of the Roseville roundhouse with some of the big cab-in-front locomotives in the house. It was a sizzling summer day, and in Roseville it gets extra hot. The general foreman at Roseville was a friend of mine, and that young fellow went to town to line up those locomotives. There were only three of the big engines in the roundhouse when we started. Those big babies do not hang around the house long; they are on the go, or were in those days. On the incoming track were several more of the cab-aheads just in off the mountain and waiting for inspection, oil, water and sand. It required a number of switch moves to get them off the line and into the house. It also called down upon our head the wrath of the inspectors, grease monkeys, engine washers and wipers, as we disrupted their program. But we got the engines in. We also grabbed several more on their way on the out-going track to hitch onto their trains. After an hour and a half, we final-



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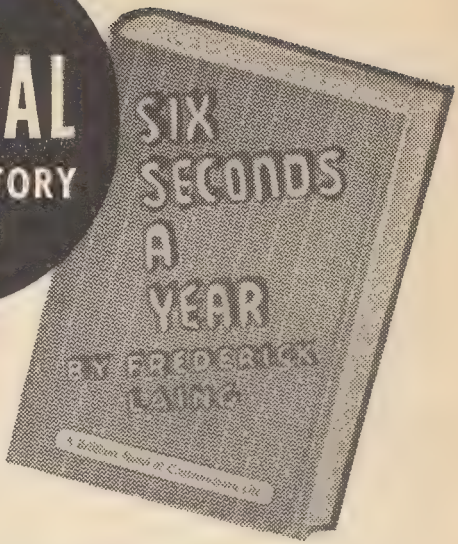

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ly managed to line up 13 engines. Several 2-10-2s had to be pushed out of the way.

On Christmas Day, 1931, the passenger train enroute from Portland to Los Angeles, pulled by No. 4402, one of the big Baldwin 4-8-4s, stopped at Richvale, a small station in the center of the rice fields south of Chico. After unloading mail, express and a few passengers, the train pulled out and had not gone far when the crown sheet of No. 4402 let go. The boiler bounced up in the air, landed on the tracks and turned a somersault, landing in the ditch alongside the tracks, in the opposite direction of the train. The engine and tender were equipped with ET brakes, and when the boiler went up in the air, the tender uncoupled from the train. Nowadays, automatic brakes stop the train when the air hose breaks; but the brakes did not set up on the tender and what remained of the locomotive. The frame and wheels of the engine, with the tender, went down the track quite some distance before they came to a stop. I had orders by phone to get up there the first thing in the morning and get what pictures I could, including some of the boiler in the ditch.

Next morning it was raining and blowing, a cold bleak day. I set up the camera, and was fortunate in having help from several onlookers, as the camera had to be held by three men to keep it from blowing away. Rain splashed onto the lens, and each time I pulled a slide on a holder the slide would get wet. Then the down train to Sacramento was four hours late because of storms, and it was 10 p.m. before I returned to the office. I was wringing wet, as there was no place to go under cover at Richvale, and the train was so crowded coming back I had to stand in the vestibule. There on the door of my dark room was a note, "The Supt. M. P. wants seven prints of each negative on his desk before 8 a.m."

Developing the films, I was overjoyed to find they were perfect. The water on the lens and on the films from the slides had done no harm. By 3 a.m. I had 70 prints from 10 negatives on the super's

desk, although to do it I had to print from wet negatives. With a small negative in a dust-free carrier on a modern enlarger the job would be easy, but just try to make prints from a large 8x10 negative straight from the wash water, and multiply seven by ten. And care had to be taken not to damage the negatives.

Another time a picture of a switch engine was wanted in a hurry. The hostler spotted the engine on the turntable lead, set the brakes and went on to move another engine. I set up my camera, and just as the slide was pulled, before a picture could be taken, the engine started to move toward the turntable pit. Before anyone could stop the locomotive it was over in the pit. I snapped a picture, but not the one that was wanted originally.

In 1924 when the foundation for the new station at Sacramento was started, a picture was required of the site. The only place that this could be taken from, to get in the entire site and also include the old station, was atop the 10-story California Fruit Company building at 4th and J Streets. Getting permission to go up there, I found that there was a firewall fully 5 feet high above the roof. And on the J Street side of the building was an overhanging cornice 3 feet wide. From that cornice, with a strong wind blowing, I got the big camera set up, and took several pictures. Two of the shop men went over with me and helped to hold the tripod so the camera would not blow away. A rickety old ladder served as a support for the cameraman to stand on. When the new station was being built, a picture of progress was required every two weeks. Not from the top of the Fruit Building but from a tower erected specifically for the cameraman. All in all, 120 progress pictures were taken.

In 1942, the chief finally was persuaded to get a 4x5 Speed Graphic with range finder and speed gun, and a 4x5 Omego enlarger. This made the photographer's job a lot easier. But even so, the old 8x10 which had served so faithfully and long was still used on many jobs. In the 30

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odd years that the big camera and I had kept company, we took over 300 pictures, ranging from defective rivets to men pouring molten metal for a locomotive frame. From little old *Eight-Wheeler* type to the giant cab-aheads. Picnics, groups, portraits, accidents, and over 350 men who had retired on pension. Not to mention several weddings of shop men. And once I was asked by a car washer to take a picture of his mother in her casket. The cover of the casket was removed and the casket set up on an angle for a portrait, full length.

I never did keep track of the number of family Bibles brought in to have a copy made of a page listing the birth of someone who had to prove his age in applying for a pension.

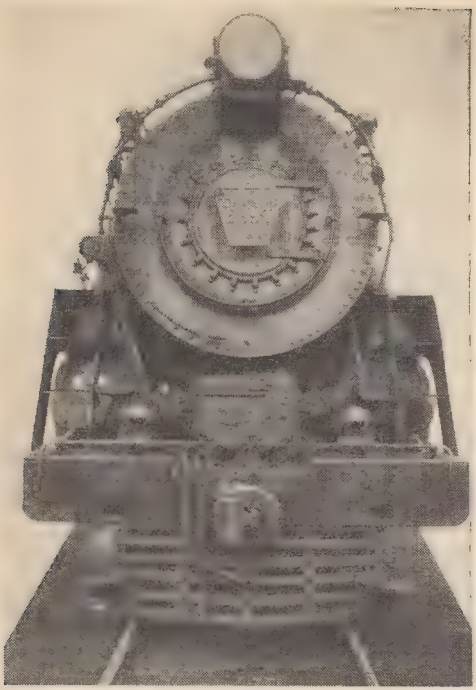
Yes indeed, the railroad shop photographer is an important part of railroad life, but because he does not operate trains his work is unsung, and the pictures that appear in the railroad company magazines are taken for granted.

RAILROAD CAMERA CLUB is open to all who collect railroad or streetcar pictures or other railroadiana such as timetables, passes, train orders, trolley transfers, magazines, books, etc. There are no fees, no dues.

Membership card and pin are given free to anyone sending us the latest Reader's Choice Coupon and self-addressed stamped envelope. If you don't want to clip page 132 make your own coupon. Address *Railroad Magazine*, 205 East 42nd Street, New York 17. Tell us what you want or what you offer.

ITEMS sent to the *Switch List* and *Model Trading Post* are published free, in good faith, but without guarantee. Write plainly and keep 'em short. Print name and complete address.

Because of time needed to edit, print and distribute this magazine, all material should reach the Editor nine weeks before publication date. Redball handling is given to items we get the first week of each month, if ac-



Pennsy steam fans will remember *Pacific* 5399. One of some 400 K4 Class locomotives based upon J. T. Willis' design, she pioneered poppet valve in 1939. Built in the Juniata Shops in '24, No. 5399 and others of her class were high speed passenger pullers

companied by latest Reader's Choice Coupon (clipped from page 132 or home-made).

Because of scarcity of space, we prefer that no reader be listed here oftener than once in three months.

Use these abbreviations: *photo,* photograph; *cond.,* condition; *ea.,* each; *elec.,* electric; *env.,* envelope; *eqpmt.,* equipment; *esp.,* especially; *info.,* information; *n.g.,* narrow-gage; *negs.,* negatives; *p.c.,* postcard; *pref.,* preferably; *tr.,* train.

Do not use the term *pix* interchangeably for photos and drawings. Specify *photo* or *drawing.*

The term *tts.* refers to public timetables, unless preceded by *emp.,* when it means employe's (operating) timetables.

(R) indicates desire to buy, swap or sell back issues of *Railroad Magazine* or its predecessors, *Railroad Man's Magazine* or *Railroad Stories.* (Specify condition of each copy.)

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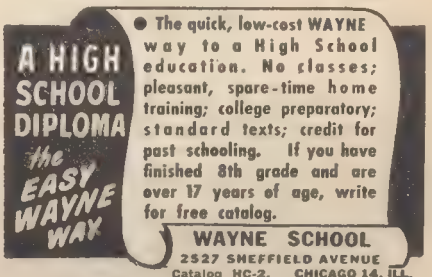
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(R*) JAMES J. BUCKLEY, 2617 77th Ct., Elmwood Park 35, Ill., will pay well for Jan., Feb. '33 *Railroad Stories.* Also wants info., size 616 photos, negs. of gas elec. rail cars. Will buy or trade.

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G. H. FITSCHEN, 2027 Woolsey St., Berkeley 3, Calif., wants photo of Northern Pacific No. 104, last engine he ran on that RR.

(R) GILBERT GRIFFIN, Helendale, Calif., will pay fair price for *Railroad Magazines* Jan. '30 to Dec. '40 compl.

PAUL GROUX, 13-D Lovell Ct., Nutley, N. J., wants photos. esp. Diesels of Erie, also desires tts. of Western RRs.

(R) GORDON S. HAMILTON, Box 937, College Sta., Berea, Ky., wants clean, unform, unmarked copies *Railroad Magazine* Apr. '45, July '47, July, Aug. '51; also copies *Slow Train to Yesterday, Trains, Tracks and Travel, L&N Railroad* by Kincaid Herr, all good cond., pref. with orig. paper covers. Write first.

DONALD T. HAYWARD SR., 41 Bancroft St., Springfield 7, Mass., has steam negs. B&A, B&M, CV, MC, NH, NYC, Rutland, some CNR, CPR, other rds. Wants to exch. negs. CV, NH, NYC, Rutland.

(R) ROBERT A. HUGHES, Box 26, Harriman, N.Y., has *Railroad Magazines* July, Aug., Dec. '38; '29 exc. Dec.; all '40 to date, good cond. Will exch. for stamps, envs. issued prior '04 or will sell.

(*) KENNETH C. JENKINS, 2030 84th Ave., Oakland 21, Calif., will sell p.c. size steam, elec. photos, 15c ea. No list; specify wants. Wants info. about Daggett & Borate, Death Valley RRs.

(R) ARNOLD B. JOSEPH, 2512 Tratman Ave., New York 61, N.Y., sells *Railroad Magazines,* '35 to '51, incl., also some older issues. List, prices for 3c stamp. Also has batch of odd mags., to highest bid, incl. 9 *Model Craftsman;* 7 *Flying Aces;* 8 *Miniature Railroading;* 2 *Baldwin Loco.* Gives free NY City Transit token or East Coast city trsf. with ea. mag. order.

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(R) G. L. LARNED, 9 Orchard Rd., Larchmont, N.Y., will pay reasonable price for complete set *Railroad Man's Magazine,* old series, good cond., all front covers.

(R) ERNEST A. LEHMANN, Boyd, Minn., will sell '47, '48 *Railroad Magazines* at cost. Also will sell loco., tr. photos CMStP&P, M&StL, C&NW, GN, size 620 printed on 616 paper, 25 for $1. Revised list, sample 10c.

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MAX MILLER, Box 315, College Corner, O., will sell size 5x7 photo of B&O No. 1317, 4-6-0, built by Baldwin 1896, 25c.

(R) E. L. NEWKIRK, 1115 N. Willow St., Rushville, Ind., wants *Railroad Magazine* containing '42 index.

ELLIOTT RAPKIN, 1470 East 116th St., Cleveland 6, O., wants EMD loco. photos, esp. those on NYC.

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(*) JACK THOMAS, 2349 Beaufort St., Pittsburgh 26, Pa., will buy photos or any info. on Pittsburgh & Butler Street Car Co., also Harmony Short Line.

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GEORGE C. WHITE, 548 43rd Ave., San Francisco 21, Calif., wants *All About Subways* by Conklin, also address of rail photographer Peterson of Los Angeles who took photo of P.E. Catalina Spec. appearing in '44 *M.R. Encycl.*

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PETER P. KLOSKOWSKI, 1362 La Salle Ave., Minneapolis, Minn., will sell 0 gage GMC *Pacific,* partly built; GMC switcher GN paint; all metal stock car lettered GN; all metal tank, unlettered; 100 ft. 172 brass rail, 50 ft. alum.; 2 No. 4 brass switches; 48 in. road, circle Truscale, 21 ft. str.; 5 sets Scale trucks finished, painted; all rolling stock has full working couplers; bonus, paints, many parts. Answers all requests.

B. PAULOV, Box 1305, Vald'Or, Quebec, Canada, will sell *AF* set, 5 frt. cars, pr. auto sw. 25 cy., excell. cond., reasonable. Write for details.

W. E ROBERTSON, 711 8th St., Wilmette, Ill., will sell *Scalecraft* 0 gage misc. frt. cars built '41; automatic couplers.

JOHN ROUGEAU, Box 71, Bridgeboro, N. J., has 0 gage *Berkshire,* tender; *Scalecraft* SP *Mountain,* tender, no motor, $75 ea.; *Walthers* pass. cars, inside fittings, $15 ea.; frt. cars $3.50 ea.; also tinplate eqpmt. List for stamp.

30 ties $3.50
40 ties $3.75
50 ties $4.00
Postpaid

A beautiful and practical gift!

This modern tie-rack is a handsome addition to a man's closet. Lets him see the tie that matches his suit. Individual plastic hangers threaded on chrome bar. Sturdy plastic mahogany back 15" long holds 30 to 50 ties.

BELDING NOVELTIES, Dept. F1

1372 West 111 St. Cleveland 2, Ohio

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If you have trouble with plates that slip and rock and cause sore gums—try Brimms Plasti-Liner. One application makes plates fit *snugly and stay that way,* because Brimms Plasti-Liner is a permanent reliner. It relines and refits loose plates in a way no powder or paste can do. Even on old rubber plates you get good results six months to a year or longer. **YOU CAN EAT ANYTHING!** Simply lay soft strip of Plasti-Liner on troublesome upper or lower. Bite and it molds perfectly. *Easy to use,* tasteless, odorless, harmless to you and your plates. Removable if desired. Money back if not completely satisfied. *Ask your druggist!*

BRIMMS PLASTI-LINER
THE PERMANENT DENTURE RELINER

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If you suffer from those miserable ear noises and are Hard of Hearing due to catarrh of the head, write us NOW for proof of the good results many people have reported after using our simple home treatment. NOTHING TO WEAR. Many past 70 report ear noises relieved and hearing improved. ***SEND NOW FOR PROOF AND 30 DAYS TRIAL OFFER.***

THE ELMO CO.
DEPT. 2PF9 DAVENPORT, IOWA

New Amazing Wonderful Gem
DIAMOTHYST
Far more brilliant than
DIAMONDS
$24 Per Carat

a. FISHTAIL STYLE with *Diamothyst* gem

1 carat.....$42.00
2 carats..... 66.00
3 carats..... 90.00
4 carats.....114.00

b. MODERN GYPSY with *Diamothyst* gem

1 carat $65.00
2 carats..... 89.00
3 carats..... 113.00

c. PRINCESS EARRINGS

Please note the illustration here of the new wing-type safety mounting that is so easy to put on and so very comfortable to wear. Please specify in your order if you wish earrings for pierced ears. There is no extra cost. **$84.00 pair**

d. BOX STYLE with *Diamothyst* gem

1 carat..$60.00
2 carats.. 84.00
3 carats. 108.00

e. GOLD CHAIN AND CROSS with *9 Diamothyst* gems....$75.00

PAWNBROKERS, ATTENTION:

We urgently recommend that you order a sample of this amazing product to have in your shop for comparison with a genuine *diamond*. Many *pawnbrokers* have paid out money under the impression that they were loaning on *diamonds* when in reality, the people were offering *Diomothyst*.

Harder than zircons, keep their brilliance forever.
Diamothyst is .7 on the *Mohs's* scale of hardness, and *diamonds* are .9.

The greatest gem discovery in history, which is the result of experimentation of one of America's largest corporations, brings you *Diamothyst*, a gem with a refractory index higher than, and a dispersion factor greater than a *diamond*. Its refractory index is about 10% higher than *diamonds*. It may seem fantastic to you as it did to us, but now you can have a gem that looks like a *diamond* and is actually far more brilliant than a *diamond*, and even many PAWNBROKERS have mistaken it for a real *diamond*. Yet you can have it at about 1/30 the cost of a genuine diamond. (Buy a Diamothyst instead of a *diamond* and save the difference.)

Only $24 a carat, tax included. The hundreds of dollars thus saved will go far toward buying a home. You need no longer invest large sums of money in a tiny stone, the value of which is determined largely by *scarcity* and *control*. YOU can enjoy the beauty and prestige and the envy of your friends with a stone that only an *expert* working under a *good light* can detect as not being a real *diamond*.

COMPARE:

REFRACTORY INDEX OF DIAMOTHYST IS BETWEEN 2.62 and 2.90 as compared to DIAMOND'S 2.42

DISPERSION OF DIAMOTHYST RANGES BETWEEN 0.155 and 0.205 in comparison to the DIAMOND'S 0.025.

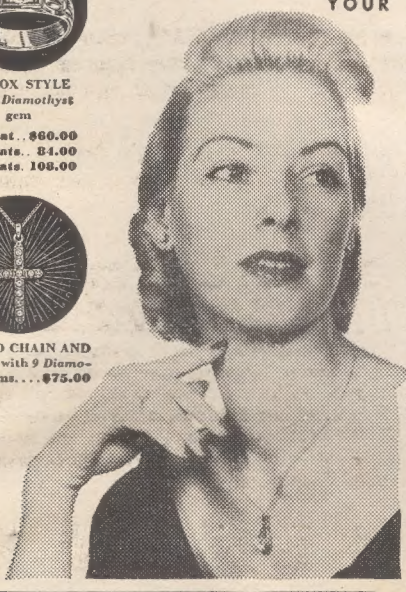
MONEY BACK GUARANTEE WITH A 30-DAY TRIAL IN YOUR HOME.

YOU ARE THE SOLE JUDGE

In this advertisement, you are assured, that if you are dissatisfied for any reason whatsoever, you may return the Diamothyst for 100% CASH REFUND WITHOUT QUESTION!

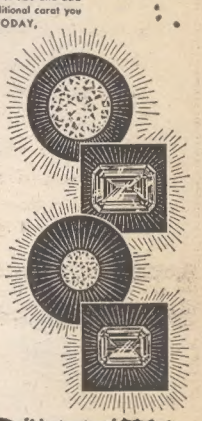
You can order the— in 1, 2, 3, 4, 5 —up to 10 carats at $24 a carat.

Take the price of the rings shown above in the 1 carat size and add $24 for each additional carat you want. ORDER TODAY, DON'T DELAY!



A beautiful engagement ring made with a *Diamothyst* presented to any girl will inspire her devotion. You can buy many things with the hundreds of dollars thus saved. Each *Diamothyst* is perfectly cut, with full 58 facets per brilliant stone. Legally we cannot refer to the *Diamothyst* as a *diamond*, so we ask you to order in the 3 most popular *diamond* shapes — namely the round or *BRILLIANT*, the oblong or *EMERALD* and the oval or *MARQUISE* cuts.

You may order these gems for setting by your local, friendly, trustworthy jeweler, who will be glad to verify your purchase, or you can order them in the mountings shown above.



FREE There is no charge for mounting *Diamothysts* in Your Jewelry —they will be mounted absolutely *FREE!*

REGAL GEM CO., Dept. 110, 318 Market St., Newark, New Jersey

Yes! Please rush my selection of DIAMOTHYST gems as I have indicated below. If not delighted, I may return them within 10 days for full refund. My finger size is.....

☐ I enclose $5. I will pay postman balance plus postage.

☐ I enclose full price, send postage prepaid.

MOUNTED GEMS:

☐ A. 1 Carat Diamothyst Fishtail style set in 14-kt. white gold mounting $42.00
☐ B. 1 Carat Modern Gypsy with DIAMOTHYST Gem set in 14-kt. white or yellow gold mounting $65.00
☐ C. 1 Carat Princess Earrings $84.00
☐ D. 1 Carat Diamothyst set in masculine Box Style white or yellow gold mounting .$60.00
☐ E. Gold Chain and Cross with 9 Diamothyst Gems.....$75.00
☐ Pendant with gold chain, 1 carat Diamothyst, only $65.00
EACH ADDITIONAL CARAT $26. style as shown on model

UNMOUNTED GEMS: ☐ 1 Carat $24.00 ☐ 2 Carat $48.00 ☐ 3 Carat $72.00, etc.
EACH ADDITIONAL CARAT $24.

NOTE: A $5 deposit must accompany each C.O.D. order. All prices tax included.

NAME.....

ADDRESS.....

CITY..... Zone..... State.....

NOTE: If you don't know ring size, send thin strip of paper.

SENT ON APPROVAL

HOW TO MEASURE FINGER SIZE

(1) Cut flat, stiff cardboard into a long, narrow wedge. Take ring that fits and is not bent; (2) Slip it over narrow end of card until it stops—do not force. Draw lines at both sides of ring. Send us the cardboard. Do not send your own ring; nor use string to measure.

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Send me, absolutely free and postage prepaid, your complete money-making outfit including free sample stocking. It is understood I am under no obligation and if I am not satisfied with the money I make, I will throw away the whole outfit.

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There is nothing for you to buy or deliver. You don't risk a dime. Pay nothing now or later. Just mail the coupon, that's all. We'll send you FREE SAMPLE STOCKING and complete money-making outfit postage prepaid. Show women how they can save at least half of their hosiery cost and write orders. We deliver and collect. Could anything be easier? If you don't make money quicker and easier than you ever did, throw the whole works away! Can we say more?

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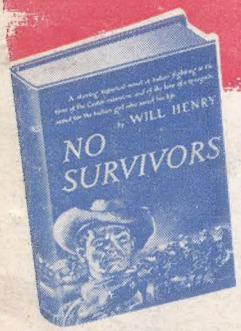

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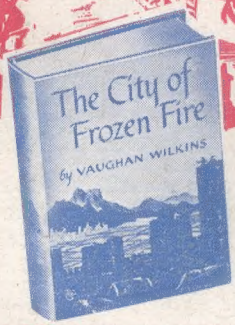
The gripping story of six frightened people, trapped between a desperate murderer and an erupting volcano! By the author of **The Survivors.**



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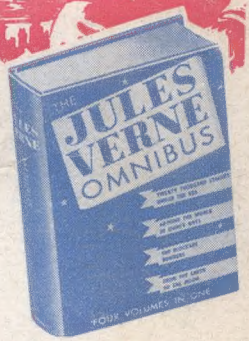

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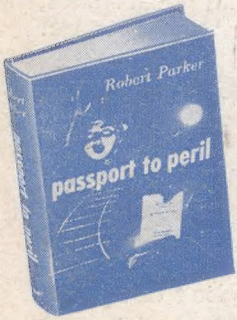

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